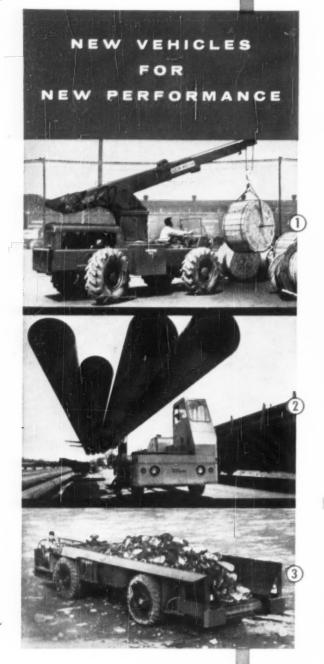
# DUN'S REVIEW and Modern Industry

JANUARY 1956 75

Executives and Ethics
How to Profit from Progress
Training Management Talent
The Trend of Business
AND OTHER ARTICLES AND DEPARTMENTS





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# DUN'S REVIEW and Modern Industry

READING AND ROUTING MEMORANDA

Executives and Ethics35
Melvin H. Baker Chairman of the Board, National Gypsum Co.
Is the recent trend in business fiction good or bad for the business man? The author believes there is a little of both and after taking a close look at it, passes on some constructive criticism.
How to Profit from Technical Progress37
Annesta R. Gardner Industrial Editor
The decade since World War II has wrought many changes in the methods and products of industry. Are you taking full advantage of them? Here is how you can find out, and catch up with those you've missed.
Building To-Morrow's Management40
NATHANIEL STEWART Director, Management Development Program Government Employees Insurance Co.
A company on the verge of growth has many things to consider, not the least of which is where the needed managerial talent is to come from. More companies are developing abilities within the organization.
Picking Executives for Their Big Blue Eyes42
Alfred G. Larke Employer Relations Editor
Specialists in the recruiting of executives tell of some of the foibles and errors of employers when they are on the hunt for men of top talent. Are you, too, passing up opportunities to get better men?
The Meaning of Control45
Douglas S. Sherwin Assistant Co-ordinator, Rubber Chemicals Div, Phillips Chemical Co.
Business terms should be precise, specific, and un- ambiguous, but there is much disagreement as to what the word "control" denotes. Here is an analysis of the term and its importance to to-day's management.
Conference—Profit or Loss?47
JEROME MAYER Visiting Lecturer New York State School of Labor and Industrial Relations Cornell University
Losses of time in a conference mean losses in other ways, too. Work on a conference should start long before the actual meeting and here are pointers on what can be done and how it can be done efficiently.
THE SEMI-ANNUAL INDEX of DUN'S REVIEW AND MODERN INDUSTRY for the

THE SEMI-ANNUAL INDEX of DUN'S REVIEW AND MODERN INDUSTRY for the July-December 1955 period is available. Copies of this index, with listings according to subject, title, author, and companies mentioned, may be obtained upon request.

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#### JANUARY 1956

#### DEPARTMENTS

- Featuring some statements on the outlook for 1956, plus the present status.
- A proper delegation of authority is good business for all concerned.
- Highlights and Sidelights......53
  How soon the peaceful A-Bomb? Is it true what they say about sun power?

- New Methods and Materials......65
  How to brighten products and plant equip-
- ties under one roof for customer benefit.

  Employer Relations......81
- Organizing plant disciplinary standards and procedures to guide supervisors.
- Here and There in Business......91

New packaging equipment, new construction methods, highlight month's products.



#### The Cover

The automotive center and economic bellwether of the country, Detroit, Michigan, is the fifth largest city. It was founded by Cadillac in 1701 and started out as a fur trading post.

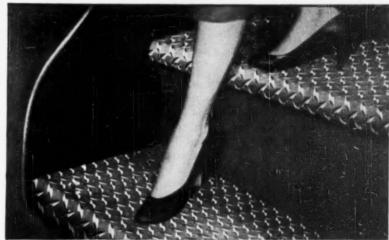
COLOR TRANSPARENCY BY RUDY ARNOLD

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#### **BUSINESS IN MOTION**

# To our Colleagues in American Business ...

Copper tube is used for hot and cold water lines, radiant panel heating, drainage lines, and to carry fuel or lubricants in automobiles and machine tools. Those are some of the conventional applications. However, during the last few years a new market has developed for this tube. You might like to he ar about it. It is in pneumatic or hydraulic recording and control systems. One end of the tube is located at the point where temperature or pressure must be observed, and the other end is connected with a dial, a recording device, or an automatic controller. The tube may be filled with air, an inert gas such as nitrogen,

or a fluid. The tube has the great advantage that it carries no electricity, and thus can be installed in places where a spark might cause an explosion, as in a plant handling combustible gases or chemicals.

Originally the idea of using copper tube for this purpose was carried out by running separate lengths of bare tube from the originating points to the panel board. This meant considerable care in installation, and it was also necessary to run

the tube where it would not be subject to mechanical damage, or to protect it otherwise. Then a new development appeared: cabled tube. A way was found to put as many as 19 quarter-inch copper tubes in a single armored cable, so that instead of rigging 19 separate runs of tube, just one cable is run, the tubes being fanned out at each end as required. Installation time is cut markedly, and the armor provides self-protection. Cable runs as long as 1,000 feet are possible without joints. The tubes are color-coded.

Just to give you an idea of the usefulness of tubes in cables, here are a few of the applications in the plant of just one public utility: boiler temperatures, main and reheat steam pressure, boiler feed and condensate pump pressure, condensate temperature, fuel oil and gas pressures, liquid levels, tide level, boiler drum water level, control of fuel feed, draft dampers, and numerous other controls.

This is a fast-growing use for copper tube, and while it will not match the demand for tube in commercial structures and private homes, nevertheless it is an important subject for industry and instrumentation engineers. In fact, a couple of years ago we thought that cabled tube had enough news interest

to justify running an advertisement about it. Revere does not make cabled tube, but a Revere customer does, so we reported the matter as a service to industry. Mail began to arrive immediately, asking for further information. It is still pouring in, as the result of a second advertisement on the subject, appearing less than a year ago. American business certainly watches the advertisements for news it can use.

This is an example of imagination applied to a product that literally is as old as the pyramids. We have said in the past that "copper is the metal of invention," because it is so adaptable to man's genius. But there are many other materials, not merely metals, but such substances as glass, wood, plastics, fabrics and fibres, that also respond to an inspired touch. Why not get in touch with your suppliers, and let them know your problems? Perhaps they can arrive at a new way to use an old product, or even develop something new to solve an old problem. Just let it be known what you need, and watch people respond!



#### REVERE COPPER AND BRASS INCORPORATED

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THE OUTLOOK in the capital goods sector of the economy is so favorable that Government economists expect it to be the principal factor in keeping business activity at a high level throughout the calendar year. It has been stimulated by the fact that the President has cast off the sick-man rôle.

The economic advisors already have indicated that any trend toward depression would be met by a positive program. This is made easier by the change in the Russian attitude.

It is taken for granted that large expenditures also will be made in 1956 for highways and schools. It is expected that Congress will override the budget on defense items. The same thing is likely to happen on amounts asked for the agricultural program.

Forecasters are encountering an unusual element of uncertainty in trying to fathom intentions of consumers. An increase in the rate of savings is expected as well as some shifts in the types of goods purchased.



While inflationary pressures are expected to increase, attention is called to the increase in productive capacity. Industry has not been spending between \$6 billion and \$8 billion a quarter for seven years on plant and equipment without adding very materially to output. While bulges in demand have temporarily pinched productive capacity in some lines, this has not been general and will improve, it is felt, as the year advances. Quality and service have become almost as important in competition as price.

Mixed reactions have greeted the merging of the American Federation of Labor and the Congress of Industrial Organizations. Some think it is tantamount to a new poPaul Wooton received a special award from the Washington Society of Engineers for his contribution over the years as a member of the Society. He received the award at the annual dinner at which time an award was also presented to the Honorable Herbert Hoover.

Paul Wooton also appeared on the television program, "Meet the Press," Sunday, December 11, as a member of the panel interviewing Mr. Hoover,

litical party. Others feel that greater strength is likely to bring a greater sense of responsibility and will make it easier for the union movement to be operated in the public interest. Most observers are waiting on developments. They think the plane on which the merger will operate soon will become apparent.



Defense planning is fanning out. Increased destructive power of bombs and greater ability to reach targets could influence combatants to withhold their use. Fear of retaliation kept the Germans from using gas in World War II. Recognition of a similar possibility under present conditions has resulted in more attention to plans for handling a long-drawn-out struggle that might not involve an attack on the United States. Heretofore, emphasis has been put on the assumption that there would be destructive initial atomic attacks on the American mainland to be followed by intensive retaliation in kind, with chances favoring a war of short duration. Changing conditions make it more advisable to devote greater attention to other possible types of emergency.

Electronic computers have made it possible to issue reports in the census of business from six to eight months earlier than would have been possible without them. Given more experience, census officials feel that the lag in reports can be reduced still more. One operation, for instance, took three weeks to set up. Then it took just 90 seconds to do the job.

Partial returns from the census of business show a trend toward consolidation. Retail volume increased more than 50 per cent in the 1948–1953 five-year period, but the number of outlets declined. Competitive conditions, officials conclude, are such as to force smaller profits and larger volume.

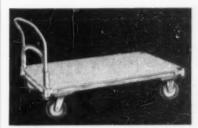


With the exception of Attorney-General Brownell and Postmaster-General Summerfield, members of the Eisenhower Cabinet have had only limited experience with roughand-tumble national politics. Now that they are expected to participate actively in the hurly-burly of a campaign in which no punches are to be pulled, they feel their lack of experience in dramatizing their accomplishments. They are not gifted as spellbinders or spread-eagle orators. They are hoping they can give a good account of their stewardship even if it must be done without gesticulations.

If Mr. Eisenhower announces that he will not be a candidate, will the buoyancy carry through? That question is frequently asked. The answer from most observers is that the announcement would not have the impact of the unexpected illness last September. The expectation is that such an announcement would be postponed as long as possible, as the knowledge that the President would not run would weaken his ability to carry through present plans.

Significance is attached to the action of Pennsylvania State Univer-





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PC found it is often a tough job to obtain architecturally appealing exterior photographs - and interiors showing their product off to best advantage were even harder to get. After futilely trying to explain their problem to dozens of photographers, Pittsburgh Corning now uses one source to cover installations anywhere in the country: Interstate Photographers.

Mr. Polk sent a memo to all Pittsburgh Corning field personnel and here's what he sity in selecting a high-caliber vice president. The purpose obviously is to allow Dr. Milton Eisenhower to devote more time to helping his brother. It is argued that the University would not have taken that action for the short time remaining of the present term, but contemplates that Dr. Eisenhower's help may be needed for a five-year period.



Business men are taking an intensive interest in education. This was brought out repeatedly during the sessions of the White House Conference on Education. Competition has reached the point where maximum intelligence and training are needed all down the line. The Chamber of Commerce of the United States alone has organized 1,800 educational committees throughout the country.

Fear is expressed in some quarters that the final report of the Conference may be the beginning of Federal aid. Limited use of Federal funds for school construction in low income areas could be the en-

NOW . . . Communi-

cate "privately" and

tering wedge for contributions for operating costs. An analysis of opinions expressed by individual delegates indicates that a majority would have voted against the final report. Local communities have shown a disposition to accept controls in their desire to get Federal aid. Neil H. McElroy, President of Procter & Gamble, had the conference well-organized. A great mass of useful opinion was made available to all concerned. That a decided strengthening of the educational system will result is certain.

While agencies of Government maintain detailed surveillance of business mergers, the trend toward mergers is causing no concern in Administration quarters. It is providing political ammunition, however, for some in the Legislative branch. For many years the Government has been urging diversification in agriculture. If it is bad for the farmer to put all of his eggs in one basket, why would not other businesses also benefit from diversification? Commerce Department officials ask. Why should not the Grace Lines get into the potash

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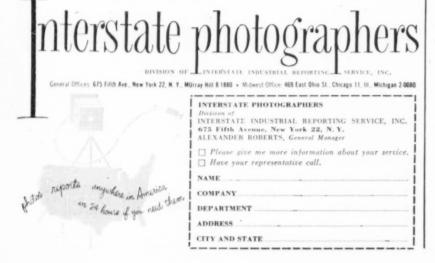
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business when a broader base of operations is an assurance of greater stability?

They point out that the large number of new plants with improved equipment induces those unable to compete to sell out—a normal development in a competitive economy.

An outstanding performance has been turned in by the Joint Committee on the Economic Report, of which Senator Paul H. Douglas of Illinois is Chairman. The Committee is composed of experienced members from both Houses. A particularly good job has been done by the Subcommittee on Taxation, of which the able Representative Wilbur D. Mills of Arkansas is Chairman. He is also one of the ranking members of the tax-writing Ways and Means Committee.

The Subcommittee, after listening to a large group of tax experts, is

unanimously opposed to tax reduction at this session of Congress. Significant findings have been made in the fields of foreign economic policy, automation, distressed areas, and low-income families.

After a talk with the President, Labor Secretary Mitchell is speeding up efforts to help areas caught in the doldrums. With the co-operation of state and local interests and Federal agencies, causes of unemployment are to be analyzed and suggestions made as to ways of providing more employment.

Attention is being concentrated on plans for speeding up the training of those qualified to acquire special skills. Unskilled labor forces will be scrutinized for the purpose of plucking out those qualified for specialized training. Secretary Mitchell feels that this is an important factor in maintaining the efficiency of industry.



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"Little steps, often taken, will get us there . . ."

#### HENRY C. ALEXANDER

Chairman of the Board, J. P. Morgan & Co., Inc., before New York Chamber of Commerce, New York City.

Money has been tight. The Federal Reserve's reasons for making it so have been thoroughly explained and are well understood. But there are some who feel that the restraint policy hasn't worked, that it hasn't curbed the boom. People who hold this view are inclined to say this is the time to give the economy the shock treatment —a real hike in the rediscount rate, a real squeeze on credit. Bring on some liquidation, they urge; let's shake things out.

Don't do it, I say. You may make credit dear, but never make it unavailable. There is a difference between tight money and no money. And for the moment money is dear enough and tight enough. If I were writing the rule or coining the slogan for monetary policy, I would say, "Easy does it." Little steps, often taken, will get us there sooner and more safely than giant ones.

Experience has taught us that it takes a while—usually six months or so—for changes in monetary policy to exert their full impact. So let's not be impatient for drastic results. Actually, there have been signs recently of a slight easing in the money situation. One hears reports that loan demand isn't pressing quite so hard on the supply of funds. This is not the time

for an all-out application of restraint. Certainly not, and maybe we should be thinking in terms of somewhat less restraint. We should wait a bit and see.

However, I definitely do not agree with those who say the signals are on for an all-out dose of ease in the coming year simply because a presidential election is in the offing. . . . The boom is riding high enough even for the politicians.

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#### JOHN R. HOOVER

President, B. F. Goodrich Chemical Co., before Salesmen's Association of American Chemical Industry, New York.

Dynamic is the word for our time and for the years ahead, with the chemical industry playing a vital and leading rôle in the process of change and growth. At the same time, because of its wide diversity and its close integration with almost every other type of industrial production, our industry has a strong stabilizing effect on the overall economic situation. It is linked inseparably to the strength of the whole American economy and is not too seriously affected by trouble in any one segment.

The chemical industry is continually preserving and stretching out supplies of raw materials. The most dramatic example is probably the development of man-made rubber, but another equally important



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is the development of plastics. These, which are usually made from our cheapest and most abundant basic resources, are now produced in greater volume than all our non-ferrous metals combined, including aluminum. . . .

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#### The mounting tide of paper work



"... get the right information to the right man ..."

W. O. TWAITS

Vice President, Imperial Oil Limited, before Western Area Development Conference, Portland, Oregon.

In recent years, the greatest obstacle to quick action in industry is the mound of paper which must be processed, and the number of individuals who must be consulted to arrive at an ordinary operating decision. As someone remarked, the transition from the single craftsman to the large industrial operation has been all but obscured by the pile of paper.

Today's progress in reducing direct labor effort is accompanied by a geometric increase in the number of specialists and experts, since no one man can have complete grasp of a business. Decisions must be dispersed among many people and herein lies the problem of communication in order to insure that such decisions will have business wisdom—that each company and industry is fully aware of the consequences of its action.

This is a field within which each industry must develop its own methods. How to get the right information to the right man, at the right time, depends on the capacity of individuals, as well as good organization principles. Of one thing we can be sure, increasing pressure on all levels of supervisory personnel will place great emphasis on operational research, as we define it. Even now, industry is tending to establish "procedures" as a separate area of executive control and responsibility.

#### Of competition: domestic and foreign



"... we are competing vigorously for world markets..."

JAMES H. CARMINE

President, Philco Corporation, before AMA 1955 Washington Seminar on Marketing, Washington, D. C.

Not only are companies within the same industry competing vigorously for new markets, but we are all fighting a battle against rising costs in order to maintain values and keep features in our products. We are in daily competition in the development of new ideas, in the designing of new products, on the assembly lines, and in the testing laboratories. We do not compete alone for markets; we compete, as well, for supplies and for manpower.

At the same time, we are competing vigorously for world markets. I have recently returned from a visit to the electronic trade fairs at London and Dusseldorf. To say the least, I was greatly impressed by what I saw there. The products on display were of excellent quality; the designs were good.

We, in America, must be alert to those new developments abroad if we are to compete successfully. Our manufacturing skills must be improved at every step of the way if we are to overcome the lower costs of production enjoyed by manufacturers in other countries. We need to draw heavily on new ideas and new lower-cost production methods in order to keep our products competitive in the world markets.

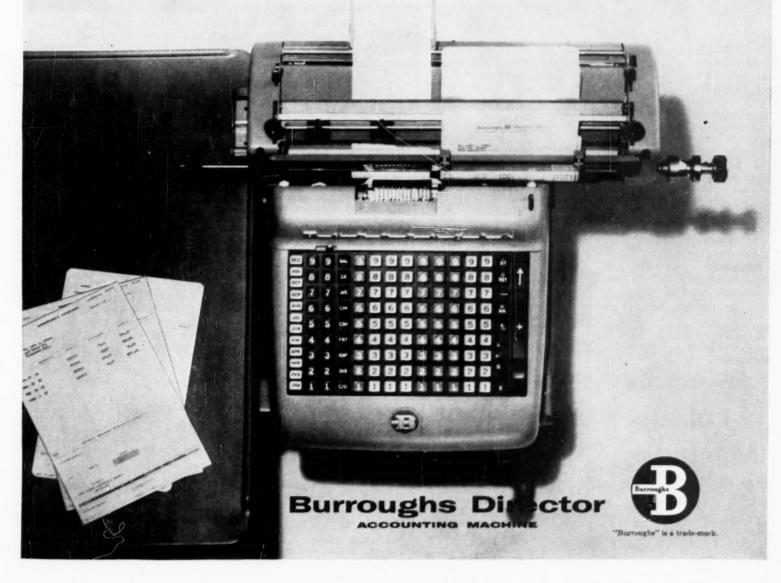
No company, large or small, can consider itself beyond the reach of FOR BRANCHES OR DEPARTMENTS OF A GROWING BUSINESS

# new low-cost automatic accounting machine

No business is big all over—but now you can bring big business speed, efficiency and accuracy to even your small volume accounting operations.

The attractively priced Burroughs Director was designed to make the step-up from pen-and-ink bookkeeping to mechanized accounting as economical as it is practical.

The new Director features easy front form insertion, two totals, and automatic big machine advantages. See it and try it. Call our branch office listed in your phone book. Burroughs Corporation, Detroit 32, Michigan.





The hand folding of builetins, form letters, statements and other usual mail enclosures is not only monotonous and boring for your office workers...it also wastes their time and your money!

You can stop this waste with a PB model FH office Folding Machine.

Electrically driven, with semi-automatic feed, it is far faster than hand folding. It can make two folds at once; double fold 8½ x 11 sheets up to 5,000 per hour. With automatic feed (optional at slight extra cost) it is even faster.

The FH makes eight different folds, handles sheets as large as  $8\frac{1}{2} \times 14$  inches, as small as  $3 \times 3$  inches, most all weights and finishes. It even folds sheets stapled together.

The larger fully automatic FM, folds up to 19,000 sheets an hour.



Originators of the postage meter . . . 94 branch offices, with service in 259 cities in U. S. and Canada.

Small and light, it can be moved anywhere, used easily by anyone, doesn't need skilled operators. Just move two knobs to the required measurements and it's ready to fold in seconds!

The FH costs less than a typewriter, quickly earns its cost even in small offices. Call your nearest PB office for a demonstration. Or, send the coupon for free illustrated booklet.



Move two knobs on inch scales to fold widths wanted—and the FH is ready to go!

The same of	PITNEY-BOWES, INC.
Min no	1510 Walnut St.,
1000	Stamford, Conn.
	Stamford, Com.
C161	
Send free be	ooklet on Folding Machine to
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its competitors during this period of extraordinary innovation. Every new idea which finds its way into a marketable product, challenges each of us already in the field. There is no such thing as an entrenched and unassailable position.

New England's rôle in to-morrow's world



". . . the flowering of a mighty research effort."

#### JOHN JAY HOPKINS

Chairman of the Board and President, General Dynamics Corporation, before New England Council, Boston, Mass.

This is New England, as I see it. A region always vital and vigorous and fortunately prepared by reason of position, character, skills, and experience to lead, in *this* century, an Atomic revolution.

It is significant that the statistics of pessimism can be controverted by statistics of optimism. New England's future is not to be gaged by pessimistic indicators of a waning textile industry, or a weakening shoe industry, but by optimistic indicators of a rising electronics industry, of a burgeoning nucleonics industry, of a new and fantastic automation industry, developed in theory and exemplified in practise largely by New England scientists and engineers, of radical new jet engine and atomic reactor industries-the flowering of a mighty research effort.

As I see it, there are seven compelling reasons why New England may be expected to pioneer the Atomic revolution. I should say, first: economic need. Second: an abundance of highly skilled craftsmen and dynamic managers. Third: perhaps the greatest pool of scientific and engineering talent in the nation. Fourth: a unique world geographic position. Fifth: a 300year experience of political and economic problem solving. Sixth: the institutions, facilities, and faculties requisite for the teaching of the new sciences and the new humanities of the atomic age. Seventh: moral character.



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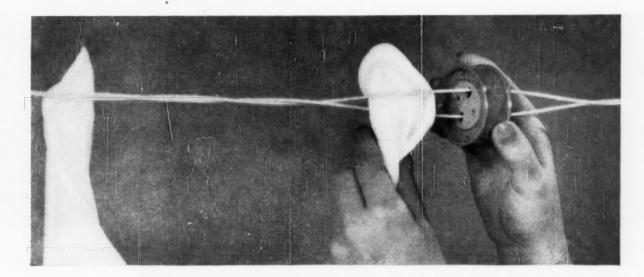
9 East 40th Street, New York 16, N. Y. Manufacturers of the most complete line of Office and Industrial Shredding Machines! A Division of Self Winding Clock Co., Inc.



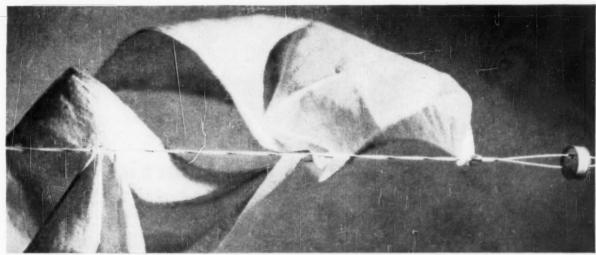
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and



## New twist for washday!



"Pin-O-Matic" Clothesline manufactured by Dennan Mfg. Co., 1 Washington Ave., Providence, R. I.

BAKELITE Brand Elastomeric Vinyl plastic extruded on twisted twin strands of wire makes the new "Pin-O-Matic" clothesline gentle to both the wash and the housewife's hands. The line won't rust or flake. It is easily wiped clean, leaving the gleaming white surface smooth as new. No matter how often the strands are parted by the disk-shaped spreader, the jacket of BAKELITE Elastomeric Vinyl retains its resilience for a safe, secure grip.

This is only one example of how you

can use Bakelite Elastomeric Vinyl compounds in products that must resist water, heat, and cold. The flexibility of these compounds can be varied according to your needs, from semi-rigid to soft. Transparent, translucent, or opaque, these materials can be pigmented to a wide range of colors with a high-gloss or soft matte finish.

Learn how BAKELITE plastics and resins can help you market new products. Write Dept. LE-42.

See Bakelite Company Exhibit at National Association of Homebuilders Exposition, Chicago Coliseum, Space #888-889, January 22-26, 1956.



BAKELITE COMPANY, A Division of Union Carbide and Carbon Corporation [1] 30 East 42nd Street, New York 17, N. Y.

The term Bakelite and the Trefoil Symbol are registered trade-marks of UCC



#### **What's Ahead in Steel Service**

Many new products and service facilities have been added at Ryerson during the past few months. Many more are in prospect for '56. Here's a review and a look ahead:

NEW STEELS—Three new Ryerson leaded alloys— Rycut 20, Rycut 40 and Rycut 50, were introduced during the past year. Additional sizes of these amazto our stocks—further additions are in store. Leaded plates, available only at Ryerson, have just been introduced and these New E-Z-Cut plates soon will be on hand in larger tonnages. Other soon will be on hand in larger tonnages. Other recent additions to Ryerson stocks: Stainless plates and sheets in extra large sizes, welded pump-cylinder tubing, mansard pattern siding in stainless, galvanized and carbon steel, 8615 alloy steel plates for case hardening applications.

NEW SERVICE FACILITIES - Ryerson service facilities are never completed —modernization and expansion go on continuously. A few 1955-56 examples: a brand new Connecticut plant, additional facilities doubling stock and service capacity at Boston, a 30% increase in facilities at Buffalo, new cut-to-length lines at New York and Boston, greatly augmented shearing equipment at Chicago, more plant area at Los Angeles, Detroit and Spokane.

NEW QUALITY PROTECTION—Now, in 1956, still more NEW QUALITY PROTECTION—Now, in 1956, still more stringent quality controls are going into effect—giving you added assurance of predictable steel performance every time. And these new controls supplement an existing program of quality checks and counter checks already considered exceptional throughout the metal-working industry.

STEPPED-UP DELIVERIES - Even under the pressure of STEPPED-UP DELIVERIES—Even under the pressure of current demand, a high per cent of all regular orders for steel from stock are shipped within 24 hours—practically all within 48 hours. With expanded facilities we confidently expect to do even better in 1956! You have helped to make 1955 another year of great progress for Ryerson. We believe we can best show our appreciation by continuing to improve our ability to serve you in the year ahead.

In stock: Bars, structurals, plates, sheets & strip, tubing, alloys, stainless, reinforcing, machinery & tools, etc.

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# The Trend of BUSINESS

- ► Holiday Spending Breaks All Records
- Inventories Increase Again
- Labor Shortage Spreads to Semi-skilled
- Failures Increase Less than Expected

#### Ahead of Schedule

Although swimming pools are not yet as common as bathtubs, there was little doubt last month that the American economy was moving ahead steadily to better things. With the sixth decade of the twentieth century more than half over, many alert marketers are already setting their sights on the 1960's when the baby boom of World War II will be reflected in many new families.

Like a train which is running well ahead of schedule, the American economy last month whipped past goals which had not been generally expected for years to come. But can this marvelous momentum be maintained as we approach curves in the month ahead? No, say most economists in and out of business, for we are now running at full draft, using all the basic materials available. However most forecasters see little chance of a recession next year (see page 18). There is a small group nevertheless which looks for a decline, insisting that nothing recedes like success.

What are some of the curves ahead which seem likely to slow the economy? Business and industry are determined on boosting their spending for new plant and equipment by 12 per cent over the 1955 average during the first quarter of the year. How this can be done while automobiles, construction, and other industries are consuming raw materials in gargantuan gulps seems perplexing. Should automobile output slip slightly, as seems likely, this, plus the recently added

#### Weekly Business Signfests

SELECTED BUSINESS INDICATORS		PREVIOU WEEK	
Steel Ingot Production Ten Thousand Tons .	229	235	185
Bituminous Coal Mined	103	105	76
Automobile Production Thousand Cars and Trucks	174	195	143
Electric Power Output Ten Million KW Hours	1161	1160	943
Freight Carloadings	715	727	642
Department Store Sales Index Number (1947-1949=100)	255	235	240
Wholesale Prices Index Number (1947–1949=100)	111	111	109
Bank Clearings	93	118	93
Money in Circulation	314	312	309
Business Failures	181	247	213

Steel and clearings for the fourth week of December; all others for prior week, except sales and freight for December 17.

Sources: Amer. Iron & Steel Inst.; Bureau of Mines; Automotive News; Edison Elec. Inst.; Assn. of Amer. Railroads Bureau of Labor Statistics; Dun & Branstruet, Inc.

capacity in basic industries, may be enough to avert steep price hikes. While inventories are still generally in trim shape, if recent rises continue they may become burdensome later this year.

Industrial production which usually dips in

December slipped less than usual last month, according to early information from many parts of the nation. In October, output as measured by the Federal Reserve Board's index was at an all-time peak of 147 (1947–1949=100), and slipped less than usual in November. The strongest support for over-all output continued to come from the producers of durable goods.

What will be the pattern of industrial production in the months ahead? Healthy order backlogs in most industries insure high production. In steel, machine tools, freight cars, paper, and non-ferrous metals, producers report that they are well supplied with orders for the first half of this year. Stepped-up first quarter spending for new plants and equipment should also buttress output in the months to come. The decision by industry to expand such spending in 1956 is itself a vote of confidence in the strength of most markets in the new year.

#### More New Orders

The latest survey of its members by the National Association of Purchasing Agents indicated that the overwhelming majority—75 per cent—reported that new orders in December equalled or topped the level of the previous month. While 35 per cent noted a rise in new orders during the month, only 16 per cent (about the same percentage as in November) reported a dip in the volume of new orders.

1956 Forecasts: next page This text continues on page 23





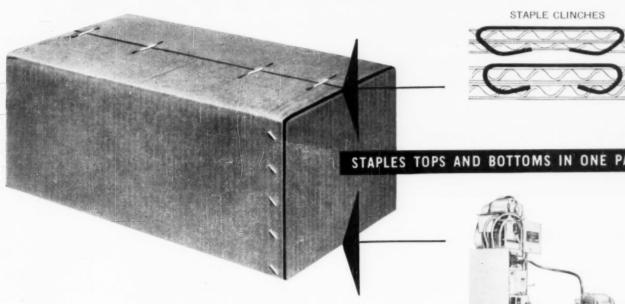
## 1956 BUSINESS FORECASTS

The total output of goods and services in 1956 will exceed \$400 billion for the first time in history, according to many analysts; \$403

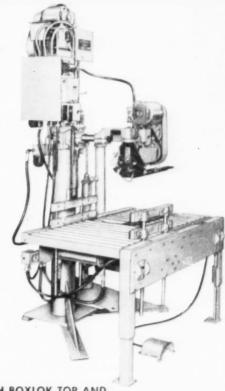
billion for the year is the average expectation. Industrial output may rise 3 or 4 per cent. Here is some of the representative thinking.

	OVER-ALL	PRODUCTION	CONSTRUCTION	SALES
The Cleveland Trust Co.	Grossnationalproduct might exceed an annual rate of \$400 billion in the first quarter. GNP for 1956 as a whole will probably outstrip the 1955 total by 3 or 4 per cent. This is based on a gain in physical volume as well as somewhat higher prices.	The Federal Reserve index of industrial output averaged 138 for 1955. For 1956, it will probably be greater by not more than 5 per cent. 1956 steel output may be within 3 per cent, either way, of the 1955 peak.	The outlook for private construction expenditures in 1956 is for a further advance, but at a slower rate than in 1955. If the declining tendency in new housing starts should pick up speed, the curbs on mortgage credit would probably be eased.	For total retail sales—a moderate increase over 1955. Sales of durables may change little from 1955, but those of nondurables will be larger. The uptrend in consumer spending for services should continue at about the 1955 rate of advance.
National Planning Association Looking Ahead	The outlook is for further expansion, but there is no ground for being complacent. It is important to have measures for counteracting economic discrepancies and not dissipate their effectiveness by premature adoption, particularly of tax reduction.	A further rise in GNP of about \$10 billion (in real terms) would be needed to maintain full employment. Such advances in productivity may be achieved that output may rise faster than employment and real wage income.	The general movement toward suburbanization will continue to create demand for additional housing, new retail outlets, and enlarged community facilities in spite of a fall in the rate of family formation and some rise in the rate of vacancies.	Purchases of automobiles and other durables will taper off, though probably at a very high level. The net addition to installment debt will rise less than in 1955; some part of 1956's income will be absorbed by payments on 1955's borrowing.
The Prudential Insurance Company of America	GNP will exceed \$400 billion for the first time in history; it may reach a \$410 billion rate before 1956 ends. We will be producing close to capacity with capital and labor fully employed. Consumers' prices are likely to inch upwards.	Substantial increases in output can be obtained only through the use of more and better equipment. Business investment in 1956 will rise about \$3 billion over the 1955 level, furnishing a substantial upward impetus to general activity.	The basic demand for housing will support something like a million housing starts annually over the next five years. The current mild decline in starts may be interpreted favorably as a gradual adjustment to a supportable level.	With a rise in personal income of about 5 per cent, a slowing in credit extension, an increase in savings, and a cut in income taxes, consumer spending will increase in 1956 about \$11 billion above 1955, providing strong business support.
Standard & Poor's	The national economy will climb to an all-time peak in 1956—most of the records in 1955 will be surpassed, many by substantial margins. There is no question that GNP will exceed \$400 billion for the first time.	Manpower availability and limitations on productive capacity will hold gains to relatively moderate proportions. Business will increase its outlays for plant and equipment, mainly the latter, in 1956.	Residential building con- struction will probably be down, but its decline should be more than offset by in- creases in industrial, com- mercial, and other types of building, for a moderate gain in total construction.	While consumer spending for durable goods may decline almost 2 per cent in 1956, the drop will be more than offset by increased purchasing of services and nondurables so that spending for personal consumption may rise 3.8 per cent.
McKay-Shields Associates	GNP should total about \$407 billion in 1956. There will be a flock of new highs, but there is serious doubt that the picture represents a sure-fire formula for perpetual prosperity. There are signs that confidence is developing into over-optimism.	The Federal Reserve Board index of industrial production will probably average out at a new high of 145 per cent of the 1947–1949 average (138 in 1955). Business will spend more in 1956 for research, promotion, and plant expansion than ever before.	Congress will pass construc- tion and school building com- mitments for future spend- ing. Credit authorities will make credit a bit easier, if not cheaper, while credit and debt will continue to rise to new highs.	Retail sales will be reaching for the \$200 billion mark, up from \$185 billion in 1955. Consumer disposable income will get a 'shot in the arm' next year with another round of wage increases and personal income taxes are sure to be reduced.
Newsweek Magazine	Estimates for GNP range from \$404-\$410 billion. 1955's gain amounted to 7 per cent—1956's will be a more modest, but still confortable 4 to 6 per cent. While 1955 was the best year to date, the record promises to stand only until 1956 ends.	Industrial output (Federal Reserve Board index) is like- ly to hit 144 per cent of the 1947–1949 average vs. this year's 138. Higher output is in prospect for aluminum, coal, and chemicals. Auto- makers say they will make as many cars as in 1955.	Continuing restrictions on credit probably will help cut 1956 housing starts to about 1,235,000 units (1,300,000 in 1955). Over-all construction spending, however, should rise from \$42 billion to \$44 billion.	If automobile sales lag, the industry may well bring out its completely new '57 models earlier than usual. At least 7.3 million TV sets should be marketed (vs. 7.9 million in 1955). Consumer spendable income likely to reach \$280 billion.

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- Tightly seals top and bottom flaps of regular slotted and overlapped containers . . . with wide-crown staples of .090 x .040 wire . . . requiring fewer staples per box . . . driven and clinched from the outside.
- Tops and bottoms stapled simultaneously—or tops only, if desired
  —at rate of over 100 stapling strokes per minute. Swivel heads
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#### Take AUTOMOBILES, for example

A focal point of beauty in the new automobiles is the gleaming front bumpers and grille work. A fine chrome finish that endures and stays bright is a must.

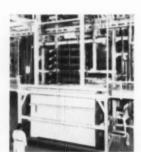
The machine shown below was designed and built by Udylite to produce uniformity of finish on the large, irregularly shaped bumpers at a high production rate.

Copper-nickel-chrome plating 360 automobile bumpers per hour, this machine embodies the Udylite "selective cell" principle. It allows for automatic selection of empty plating cells as the racks emerge from preceding operations. As they drop into the cells they fit into a nest of anodes that are hung to conform to the shape of the bumper. This assures quality plate on all curved surfaces.

Efficiency in rack utilization is also a feature, for of the 84 racks used for the machine, only four are out of service during the normal plating cycle.

... whatever your product, whatever your metal finishing problem ... it pays to consult Udylite.





World's Largest Plating Supplier

# The Trend of BUSINESS

The same survey indicated that purchasing agents were much less optimistic about future business than most other observers. Only 17 per cent look for better business in the first half, while 76 per cent thought that there would be little change in the level of business.

An increased proportion of purchasing agents encountered rising prices. Further price advances were expected in paper, non-ferrous metals, and steel.

Steel remained in short supply last month and many industry observers expect the shortage to become more stringent in the first quarter of this year. Last year steel plants produced the unprecedented total of 117 million tons, which was up 5 per cent from the previous record in 1953. Already some steel producers are talking of an output of 60 million tons for the first half of 1956.

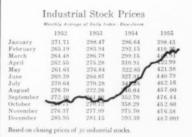
Despite the prodigious production pace of recent months, order backlogs for virtually all types of steel remain staggering. Added impetus may be given to steel demand in the months ahead by the possibility of a strike in June. Talk of a cutback in steel buying by the largest customer—the automobile in-

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	Consum	er Price	Index	
Index:	I#47-1#4# = I	e; U. S. Bureau	of Labor Statie	tice
	1952	1953	1954	1955
January	113.1	113.9	115.2	114.3
February	112.4	113.4	115.0	114.3
March	112.4	113.6	114.8	114.3
April	112.9	1100	77.0	
May	20.0	114.0	115.0	114.2
June	113.4	114.5	115.1	114.4
July	114.1	114.7	115.2	114 8
August	114.3	115.0	115.0	114.5
September	114.1	115.2	114.7	114.9
October	114.2	115.4	114.5	114.9
November	114.3	115.0	114.6	115.0 \$
December	114.1	114.9	114.3	115.1†

Wh	olesale C	ommod	ity Pric	es
Indea	1917-1919 = 100	U. S. Bureau	of Luber Statis	tice
	1952	1953	1954	1955
January	113.0	109.9	110.9	110.1
February	112.5	109.6	110.5	110.4
March	112.3	110.0	110.5	110.0
April	111.8	109.4	111.0	110.5
May	111.6	109.8	110.9	109.9
lune	June	109.5	110.0	LIGA
luly	111.8	$\sim$	110.7~	110.5
August	112.2	110.6	110.5	110.9
September	111.8	111.0	110.0	111.7
October	111.1	110.2	109.7	111.6
November	110.7	109.8	110.0	111.2
December	109.6	110.1	109.5	111.2 #







<sup>†</sup>Approximation; figure from quoted source not available.

Industrial production has already surpassed the mark (145) which a few months ago many observers were not looking for until the middle of 1956. Wholesale commodity prices appear as placid as a lake at sunset in this index, which includes both farm (declining) and industrial (rising) prices. Last month, non-farm wholesale prices rose to the highest level on record. Industrial stock prices last month recovered all the ground lost after the President's heart attack on September 24 and hit a new peak. Consumer prices may edge up to a new high in the months ahead. The extra purchasing power produced by the rise in capital spending (without a commensurate rise in consumer goods) should produce upward pressure on prices. Unemployment has not varied much in recent months, but watch the figures for January and February when rises usually occur. Retail sales soared to an unheard of total of about \$19 billion last month, according to preliminary reports from 66 cities. The latest survey of consumer finances points to easy spending in the months ahead.







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# The Trend of BUSINESS

dustry—is shrugged off by steel men. Larger demand from the construction and capital goods industries, among others, would probably take up any slack.

The automakers are each predicting a larger share of the consumer market for their particular models while sometimes admitting privately that total demand for cars may not match the high level of 1955 when 8 million cars were produced. a new record 19 per cent above the previous peak in 1950. Although the buying of cars has slipped somewhat in recent weeks, most dealers continued to top the high sales figures of a year ago. Automakers are readying radically revised 1957 models for early introduction this year if sales sag after mid-year.

#### Glowing Prospects

The prospects for the electronics industry are glowing, according to the Radio-Electronics-Television Manufacturers Association. Last

If you feel a bit worried and uneasy because there seems to be so little to worry about, then worry about these for a while:

- The worsening farm situation
- The Pisa-towering total of personal debt
- Distress areas in which the unemployed are many
- Rising prices for labor and materials
- Your own unpaid Christmas bills.

year factory sales of all electronics products soared 10 per cent to a new high of \$5.5 billion and now the manufacturers find the outlook even more encouraging than they did a year ago.

The largest rises are expected in the output of color television sets which the industry generally expects to increase five-fold in 1956 to about 250,000 units. Many dealers look for a breakthrough into boom selling for color TV this year as manufacturers are cutting costs of

production and moving it out of the luxury class. Consumers spent about \$1.9 billion on television sets in 1955 and marketers look for spending to hold at this high level this year. Despite cutbacks in defense spending, producers of electronic equipment for the military chalked up a volume of \$2.4 billion last year and expect to equal this total in 1956. The longest strides forward are expected in the industrial electronics field where automation is boosting the market for special equipment and components.

Small manufacturers who generally ended the year with record sales and comfortable order backlogs are looking forward to new peaks in volume this year. However, the picture is not entirely unclouded. Shrinking profit margins and material shortages have troubled small-to-medium-sized manufacturers in many lines.

Inventories rose slightly last month. In the beginning of November manufacturers' inventories were up 4 per cent from a year before while sales were up 18 per cent. In no lines have inventories kept pace with sales. While the sales of primary metals were up 43 per cent, stocks on hand were up only 10 per cent. In the transportation equipment industry sales were up 52 per cent and while stocks were up only 10 per cent. So even if there should be a severe drop in demand-which is unlikely-inventories would not become a drag on the economy unless recent rises con-

#### Longer Payrolls

Another new record was scored in total employment last month, according to preliminary information from many parts of the nation. Although employment slipped seasonally from recent months, it was at a new peak for any December.

Continued on page 24

This is a Business Conditions Staff Report, prepared largely from information gathered in 140 Dun & Bradstreet offices in 46 States and Washington, D. C.

# 7 Plants To Serve You 7 Ways



A brochure picturing many of the parts being powdered and describing the services of Allied's Powdered Metal Parts Division is yours for the asking.

Allied's Powdered Metal Parts Division has for many years been a pioneer in the field of powder metallurgy. Here, machining and finishing operations are frequently eliminated on both simple and complicated parts; porosity and density are controlled to meet any specific requirements; and precise dimensional accuracy is regularly provided.

Not only does this division supply powdered metal parts of innumerable sizes and contours but it also offers exclusive design features such as the oil well cavity for permanent and automatic lubrication of parts.



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# ZIPPO MANUFACTURING COMPANY, Dept. D-381, Eradford, Pa. Please give me full information on the Zippo Recognition Program. Name Position Firm Address

# The Trend of BUSINESS

Despite the drop in many seasonal activities, non-farm payrolls rose again last month. There was a rise of 100,000 in factory jobs in November, a time when manufacturers usually trim their payrolls. This was only the second time during the past decade when such an unexpected rise has occurred. The rise was centered in durables and particularly among producers of transportation equipment.

While factory jobs last month apparently moved upward from the 17.1 million in November, they were still down from the post-war peak of 17.5 million in August 1953 and the all-time record of 17.9 in November 1943. Although factory jobs were down 2 per cent from August 1953, industrial production last month was up about 7 per cent.

Unemployment which had been watched like an unruly child in 1954 has receded from view in recent months. Early information pointed to a slim decline in December from the level of 2.4 million in Novem-

ber. About 2.3 per cent of the labor force could not find work last month, a considerably smaller proportion than a year ago. Most encouraging was the thinning of the ranks of the long-time jobless. Those who have been without work for fifteen weeks or longer numbered about 425,000 last month, compared with 725,000 a year before.

If unemployment remains below 2.5 million in January and February when seasonal slackness and new job-seekers usually send it upward noticeably, this will be an impressive augury of even better things to come.

#### Dried-up Labor Pools

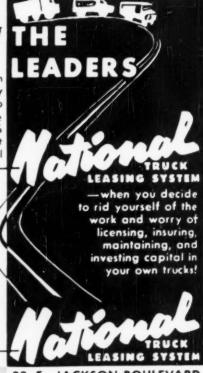
The supply of labor was tighter last month in many sections than at any time since the end of World War II. Not only the highly skilled—engineers, tool-and-die makers, and electronics technicians—were missing from the job market but

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# The Trend of BUSINESS

semi-skilled machine-shop workers, auto mechanics, loom repairmen, and many others were in short supply. Manufacturers' hiring plans as reported to local public employment offices called for a slight slowdown in the pace of hiring in January, after substantial rises in the previous months in most labor markets.

Labor pools are remarkably dry in aircraft, machinery, and metal centers. Companies in Cleveland, Chicago, Los Angeles, Hartford, Dallas, Indianapolis and several other cities experienced hiring difficulties.

While employment conditions are improved in most of the nation's 146 major labor areas, there were still in November fifteen areas of substantial labor surplus—more than 6 per cent of the local labor force jobless. Most of these were in the eastern parts of the nation. Three centers—Lawrence, Mass., Scranton, and Wilkes-Barre-Hazleton, Pa., remained severely dis-

tressed with more than 12 per cent of their workers unemployed.

#### Shopping Spree

The rising incomes of the American people were reflected in both the quantity and quality of the Christmas shopping splurge. Never before in history did so many dollars move across retail counters. However, the year-to-year of about 6 per cent in December gain was somewhat smaller than in recent months.

Merchants in most cities reported that Christmas shoppers disdained low-end goods and frequently stepped up to better-grade merchandise. Shortages which appeared in many lines should reduce the number of clearance sales this month,

#### Failures Rise Again

Business failures rose more than usual in November to 945, the highest level in six months. Exceeding



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a small Weber handprinter and an inexpensive, paper stencil. Stencil is cut on a typewriter—separately or as by-product of your shipping paperwork. A clean, fast, systematic operation. Very inexpensive. (Handprinter costs just \$14.50.) Get all the details. Clip the coupon.



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#### The Trend of BUSINESS

November 1954 by a slight 1 per cent, the toll was the heaviest for any November since 1940 when 1,024 failures occurred.

Companies failed at an annual rate of 46 per 10,000 enterprises listed in the Dun & Bradstreet Reference Book, as shown by Dun's FAILURE INDEX which extends mortality to an annual basis and adjusts for seasonal variations. This failure rate, rising for three consecutive months, was the most severe since November 1954, but was well below the 1940 rate of 60.

Current liabilities of November failures climbed sharply to \$42.8 million, the heaviest volume since March 1954, and exceeded considerably the comparable year-ago total. Most of the rise occurred in large failures involving liabilities of \$100,-000 or more. Eighty-two concerns had losses of this size; liabilities of six failures topped \$1 million.

Three-fifths of the companies which failed had started operations in the last five years. Businesses that began in 1955 accounted for 10 per cent of the month's toll and those begun in 1954 accounted for 20 per cent.

Manufacturing and retailing failures were the highest in the last

FAILURES BY DIVISIONS OF INDUSTRY

(Current liabilities in millions of dollars)	II M	nber lonths 1954		lities lonths 1954
MINING, MANUFACTURING	2011	2078	145.4	153.8
Mining Coal, Oil, Misc.	49	39	4.8	7.9
Food and Kindred Products.	150		13.7	15.1
Testile Products, Apparel.	466	504	22.4	25.8
Lumber, Lumber Products.	296	300	12.4	14.5
Paper, Printing, Publishing.	107	117	6.6	8.8
Chemicals, Allied Products	43	67	3.2	4.9
Leather, Leather Products	77	94	4.3	6.4
Stone, Clay, Glass Products.	4.5	54	1.7	2.0
Iron, Steel and Products	112	103	13.4	9.5
Machinery	264	273	34.9	36.2
Transportation Equipment.	4.4	48	4.4	5.4
Miscellaneous	360	314	23.5	17.0
WHOLESALE TRADE	1060	1034	46.8	50.0
Food and Farm Products	253	271	11.9	12.8
Apparel	59	43	2.1	1.4
Dry Goods	50	56	1.9	2.3
Lumber, Bldg. Mats, Hdwre.	125	1.00	6.6	4.6
Chemicals and Drugs	35	4.3	1.1	1.1
Motor Vehicles, Equipment.	61	5.2	1.7	1.8
Miscellaneous	477	469	21.4	26.1
RETAIL TRADE	4935	5078	110.8	137.0
Food and Liquor	967	926	17.5	13.4
General Merchandise	180	178	4.9	6.8
Apparel and Accessories	789	757	16.4	14.3
Furniture, Furnishings	676	850	19.4	42.1
Lumber, Bldg. Mats, Hdwre.	300	287	9.5	9.2
Automotive Group	500	564	11.6	19.6
Lating, Drinking Places	880	900	18.6	16.7
Drug Stores	122	145	2.5	4.4
Miscellaneous	521	471	10.5	10.6
Construction	1268	1175	75.8	50.9
General Bldg. Contractors	400	406	36.1	26.6
Building Subcontractors	800	721	32.0	21.4
Other Contractors	68	48	7.7	2,9
COMMERCIAL SERVICE	787	804	28.8	30.8

Liabilities are rounded to the nearest million; they be not necessarily add to totals.

six and seven months respectively. The manufacturing rise came largely from the textiles and apparel industry and from the lumber, furniture, and machinery lines. In retailing, the increase centered in apparel, automotive, and drugs. The toll in the automotive group was the heaviest in twenty months.

Geographically, there were mixed trends during November. Five regions had more failures than in October: the Middle Atlantic, South Atlantic, West North Central, West South Central, and Mountain States. The toll in the South Atlantic region was the highest in over a year and West North Central failures were at a post-World War II peak. However, four regions noted declines. Failures in New England were at the lowest level since 1947 and in the East North Central states at a twelve-month low. Failures were above the year ago level in most regions; the sharpest rise, 50 per cent, occurred in the West North Central States, principally Minnesota, Missouri and Kansas. The toll in the Middle Atlantic states held even with last year; only the East South Central and New England states had fewer failures than a year ago.

THE FAI	LURE	RECORD		
	Nov. 1955	Oct. 1955		P.C. Chg.†
Dun's Failure Index' Unadjusted Adjusted, seasonally	46.8 46.3	41.9 44.6		+1 -0.2
NUMBER OF FAILURES.	945	919	933	+1
Number by Size of Di Under \$5,000 \$5,000-\$25,000 \$25,000-\$100,000 \$100,000 and over	152 464 247 82	145 469 248 57	491 236	+6 -5 +5 +30
Number by Industry Manufacturing Wholesale Trade Retail Trade Construction Commercial Service	196 84 462 133 70	180 85 437 136 81	86 490	-2 -6 +21 +3
CURRENT \$	42,783	\$34,777	\$35,067	+22
Total	43,073	34,777	36,780	+17

\*Apparent annual failures per 10,000 listed enter prises, formerly called Don's Insorvency Index.

†Per cent change, November 1955 from November 1954.

Business Failures include those businesses that ceased operations following assignment or bankruptcy; ceased with loss to creditors after such actions as execution, foreclosure, or attachment, voluntarily withdrew leaving unpaid obligations were involved in court actions such as receivership. reorganization, or arrangement; or voluntarily compromised with creditors out of court.

CURRENT LIABILITIES, as used in the Failur Record, have a special meaning: they include all accounts and notes payable and all obligations, whether in secured form or not, known to be held by banks, officers, affiliated companies, supplying companies, or the Government. They do not include long-term, publicly held obligations. Off-setting assets are not taken into account.

# Craftsmen of the 20th Century

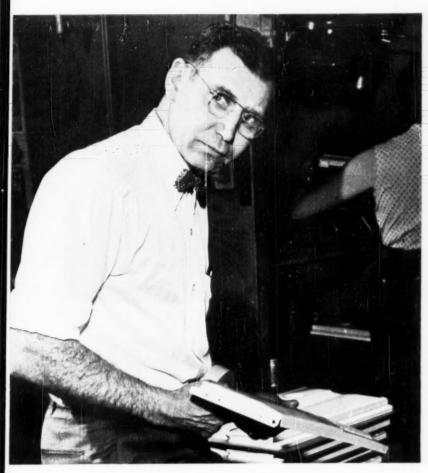
No. 11 of a series to introduce you to some of industry's outstanding plastics craftsmen



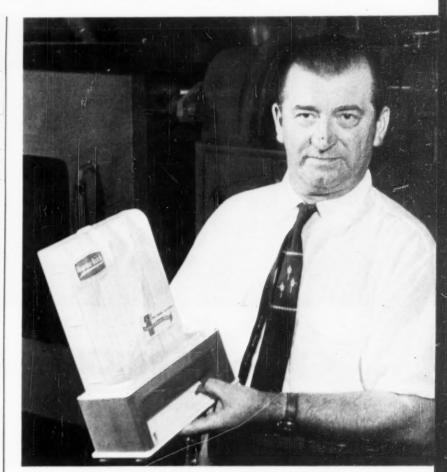
In the old days the artisan worked alone, fashioning his masterpieces of metal, wood and glass.

Modern craftsmen, inspired by new materials and aided by the methods of mass production, are working in groups to create for the masses instead of the few. By applying their skills to the mastery of plastics, for instance, these specialists are molding products that serve every industry, every home. Two of these 20th Century craftsmen are pictured on this page. Monsanto, a major producer of high-quality plastic materials, salutes these men who are helping to mold America's tomorrow.

When your plans call for plastic parts or products, consult an expert custom molder



Frank E. Schneider, Champion Molded Plastics, Inc., Bryan, Ohio. With 13 years behind him in the coordination of product design with mold engineering, Mr. Schneider now supervises the operation of some of the industry's most complex molds. During the war he assisted in the process development of plastic detonation fuses. Since, he has engineered molded steering wheels, horn buttons, hood ornaments and arm rests for automobiles; and multi-plane compartments for refrigerators. His job encompasses every stage of plastics technology from tool design to finishing.



Donald Paduchowski, Bolta Products Division, General Tire and Rubber Co., Lawrence, Mass. As a real pioneer of plastics molding, Mr. Paduchowski joined Bolta 20 years ago as an operator on one of the first injection molding machines in the northeast. During the war years, he assisted in the development of intricate military parts molded of plastics. A recent accomplishment is a complicated matchbook vending machine. He kept assembly as simple as possible with six basic precision-fitted pieces. Only metal parts required are 2 roller springs and 4 screws.

MONSANTO CHEMICAL COMPANY, PLASTICS DIVISION, SPRINGFIELD 2, MASS.







## GLOBE-WERNICKE makes business a pleasure

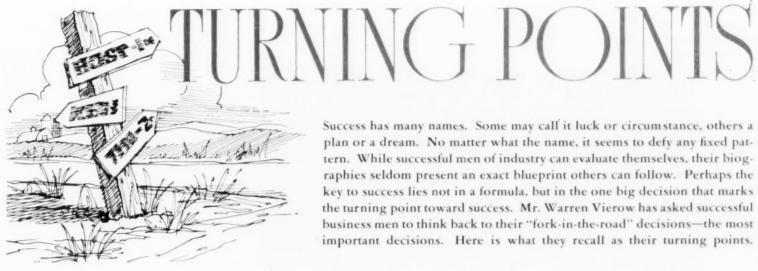


Pleasure begins in satisfaction; and your satisfaction begins the moment you sit down at your Globe-Wernicke Streamliner desk, confident that you have the most advanced metal office desk in America. The bold beauty and sound functional design of the G/W Streamliner makes it the popular choice of discriminating executives and professional men who want only the best.

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Success has many names. Some may call it luck or circumstance, others a plan or a dream. No matter what the name, it seems to defy any fixed pattern. While successful men of industry can evaluate themselves, their biographies seldom present an exact blueprint others can follow. Perhaps the key to success lies not in a formula, but in the one big decision that marks the turning point toward success. Mr. Warren Vierow has asked successful business men to think back to their "fork-in-the-road" decisions-the most

important decisions. Here is what they recall as their turning points.

CONRAD HILTON

President HILTON HOTELS, CORP.



"You may be interested in the turn of events that put me into the hotel business. I had owned a bank in San Antonio, New Mexico, but sold it while in military

service in 1918. When I returned from France, I went into business, but the idea of getting back into banking was still in my mind. Things were a bit quiet in New Mexico at that time, but there was a big oil boom in Texas, so I decided to go down there and look for a bank.

"The first stop was Wichita Falls, where I found a bank that looked interesting, but it wasn't for sale. I moved on to Breckenridge, and finally landed in Cisco, a little town not far from the great Ranger Oil Field. This oldtime cow town had a normal population of about 7,500, but when I got there it was full of wildly excited oil investors.

"There was a bank for sale, and I soon learned that the owner, who lived in Kansas City, wanted \$75,000 for it. I sent him a wire offering to pay the quoted price. He replied that it would cost \$80,000. The tone of that telegram convinced me that we couldn't do business, so I gave up the idea. I liked Cisco, however, so started looking around again, with nothing definite in my mind.

"I noticed there was considerable activity around a two-story frame building that carried the sign 'Mobley Hotel.' Inside, I found the dining room was jammed and the lobby was filled with people trying to register for rooms that were already taken. Finally, I found the owner who said he would be glad to sell so that he could get out into the oil fields. The asking price was \$50,000. Within the next few days, I tried to decide whether the place would make money. The books showed that business was

good, and I was ready to take a chance. After protracted negotiations, we agreed on a price of \$40,000. I was in the hotel business.

"That quick shift of interest from banking to hotels was certainly a turning point in my life, and chance played a large part in my decision."

ADOLPH ZUKOR Chairman of the Board PARAMOUNT. PICTURES



"As I look back over the years, I suppose that an observation that grew into a decision came upon the scene early in my youth. It was destined to affect my

whole life. I do not know exactly on which day it occurred or if I even realized at the time that I was adopting a way of looking at the world which was to lead me into many strange places and into uncharted waters in the entertainment

"The thing that I came to realize was that the world was abundantly rich in opportunity. There were all kinds of opportunities for a young man and each day new ideas and new concepts were opening up new avenues of life. Yet, the opportunities required thought and work and most of all a spirit of adventure and imagination. Without this approach, it was like knowing the existence of oil beneath the spot of earth on which you were then standing and doing nothing about it.

"So it was early in my life that I thought of opportunity in terms of a man in the water holding onto a rope that was tied to the dock. If the man continued to hold on he would surely remain afloat, Yet, unless he gave up his hold and began moving his arms and started swimming, he could make no progress. It is around this simple but basic thought that I believe I

owe much of the success that life has given me.

"When I left Europe at the age of sixteen with \$40 sewed in the lining of my suit, this big decision to embark for a new land which I knew only through the books I had read was created by a restless spirit of adventure, And, in those days, as now, there was the connection between the word adventure and the word

"Certainly no decision I ever made was more important in my life than the one which led me to this great country, but as I look back at it now, it was one in a long series of decisions which was born and had crept into my mind at an early age. Something kept prodding me to search and investigate into the exciting possibilities of to-morrow.

"I walked down Fourteenth Street in New York City 50 years ago and looked at a small exhibition of flickering images on film and talked four of my friends into renting a store and opening up the first Penny Arcade on March 4, 1903. This might be considered my most important decision for it was to lead directly to the Nickelodean and finally to a whole new industry-the movies.

"But once that initial decision was made to open up a Penny Arcade and I left my modest fur business in Chicago, all decisions that followed were like branches springing from the trunk of a tree.

"It seems to me that the progress which man continues to make in the world, especially at the present time, requires men who are willing to let go of the rope which is tied so securely to the dock and plunge into the water and start . swimming. We cannot afford to become too security-minded. It is a luxury for which progress cannot afford to pay.

"We must think positively about the most important event in our lives-to-morrow. And we must approach to-morrow with a fresh attitude of, 'Why can't it be done?' "

that all of us are concerned with, in one way or another, is success. But what is success? It's abstract, almost indefinable . . . yet peculiarly personal because it means something different to each of us. What does it mean to you?

Money? Title? Authority? Recognition? Respect? Fame? Actually, it's probably not that simple distances is done, what you really want to do doing it as well and as easily as you can having it repaired and rewarded. That brings up to the heart of the matter.

In your work can you be successful without effective personal communication? You may be the most brilliant man in your organization is extremented, informed, enthusiastic, gifted with both imagination and judgement. But who loows unless you have the ability and the facility to communicate effectively with others?

What I is your mind and stays there is important—but merely potential it becames dynamic, profitable to you and to your organization when you get it out of your mind and into the minds of others, That why communication is the real springboard, to success in

That why communication is the real springboard to success in business, in the professions and government. And in your own estimation!

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Voice letters are another unique TIME-MASTER advantage. Via Dictabelt and air mail, your voice can be almost anywhere within 24 hours. Via Dictabelt, you can be in New York and address a sales meeting in San Francisco, send confidential, personal messages to

associates and friends anywhere . . . keep in personal touch with home while traveling—and all for pennies, a fraction of the cost of long-distance telephoning.

And writing. More and more professional writers are adopting the state of its help in gathering material, speeding first drafts the active and stories, increasing productivity. It's equally a tive or professional men who must occasionally write speeches or rticles.

Record conferct es, too. Did you ever have trouble remembering in the important coints covered in a meeting? With TIME-MASTER ou can record verything said around the conference table, or needly summarize key points and decisions—and have a typed copy or everyone conference.

Telephone conversations can be recorded, too. Important, detailed rechnical phone conversations—especially expensive long distance alls—deserve this kind of accuracy. A TIME-MASTER with this nexpensive feature built in enables you to record both sides of any hone conversation automatically. Your secretary can make an ecurate transcript of just what was said, with a copy for each party. To chance of forcetting or of misinterpretation.

Wherever you are, your TIME-MASTER can make your work easier. In the office, of course, it is indispensable. Your office is your communication senter. With a TIME-MASTER on the desk, you're board to be more confident of your ability to get things done quickly; communicate with anyone simply by picking up the mike.

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pation. She's no book. While you lice, she's free to important work

with considerably op of her job but to terful satisfaction of

accomplished. The better ving her boss—and knowing he's aware of it. Because she's not tied down to dictation periods with their interruptions and delays, never has to wait or stay for last minute dictation, she functions much more smoothly and happily. She becomes that indispensable person, the perfect secretary.



# DECISION MAKING DOWN THE LINE

This is the season for forecasts and a number of statements in that area is included in this month's "Trend of Business." For the do-it-yourself forecaster it is suggested that he restrict himself to predicting a continuation of the present trend. While such an outlook may not attract much attention, it will result in a better batting average over the years than some of the more daring economists have achieved.

For a perfect score in forecasting, it is recommended that the following be used on all occasions. "During the coming months some businesses will enjoy the highest level of prosperity they have ever known and some will close their doors in failure. But for the vast majority, the level of business will be somewhere between these two extremes."

Opinions that have been expressed concerning the December cover have been exceptionally favorable. While this was a temporary departure from the more customary cover treatment, other variations may certainly be expected from time to time.

To clarify one point, the poem on the December cover was written a number of years ago by Mr. A. M. Sullivan and was not prepared especially for the magazine. It was included in a collection of his poems published in 1946 under the title Stars and Atoms Have No Size by E. P. Dutton and Company, New York, \$2.75.

IT IS a wise general who can make men of lesser rank obey his orders in a crisis. It is a wiser general who has deployed his authority to lower officers and trained them how to make decisions in a crisis.

An old professor faced by questioning youngsters, always replied, "Well, what would you do in that case?" Or, "What would you suggest?" Or, "How would you handle the situation?" He conditioned the minds of students to the necessity of weighing evidence, measuring values, and making decisions.

Modern industry has learned, too, that it is wise to let authority sift down to lower levels of the executive and supervisory staff. The younger executive equipped with a decision-making authority may make mistakes, but he'll be right more than wrong. His degree of error will diminish as rapidly as his sense of responsibility increases.

Much has been said and written on "line" authority, and the more of it that filters down from the brass section the more time management will have for investigations and policy decisions on the top deck. This is not an appeal for unskilled judgments on technical or administrative problems beyond the experienced skill of the supervisor. Line authority is never channeled to lower levels without instruction, conference, and observation. However, the more freedom of opinion, the more latitude of action, the better, because authority delegated is absorbed quicker in practise than in precept. An actual instance of giving an order by a supervisor teaches him more in a minute than he acquires in days of reading instructions.

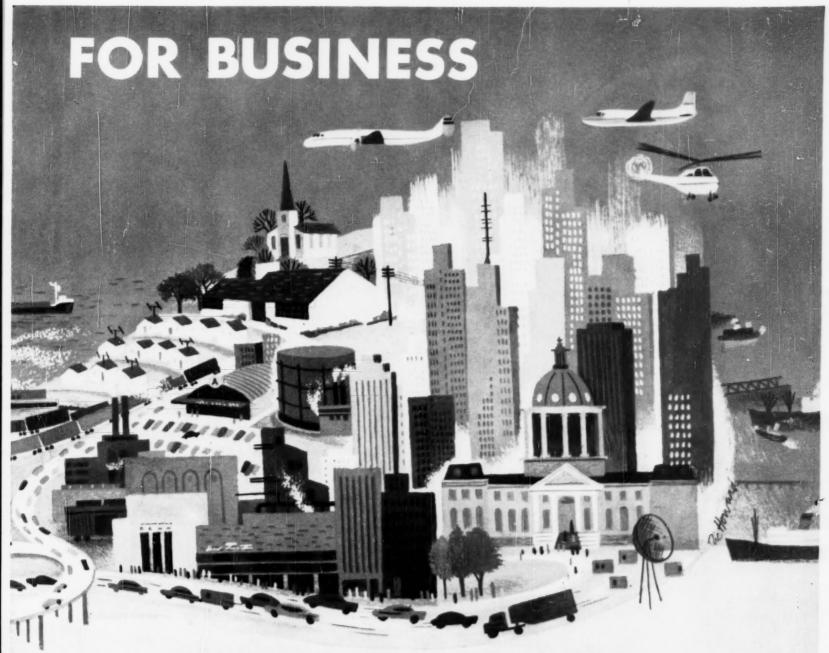
Written communication is necessary, but in many instances the written order is set down in formal verbiage rather than in direct conversational phrases. The written and the oral instructions are usually two different pieces of communication. The first is often a self-conscious, formal language; the second a precise, instructional statement in conversational and idiomatic phrases.

Training for executive command should begin with the first supervisory appointment, no matter how minor the assignment. With authority comes the sense of recognition and an added impulse to personal initiative. With the authority delegated must go the full understanding of the responsibility accepted and the limits established. If the immediate superior is a person of relaxed manner, the inferior is certain to pick up the suggestion of how to be boss without acting bossy; how to give orders when they seem to be suggestions; and how to command respect without betraying a martinet's sense of personal insecurity.

Time demands that the business executive delegate authority. To confine all administrative decisions to high levels of executive importance is a constricting influence on a business and a handicap to its efficiency. This fact is apparent: If you have to make all the decisions, you are not an administrator, and if you cannot train and trust a staff to make decisions for you, it may be time to get a new staff, or a new boss for the business.

# IBM PROGRESS REPORT





# TODAY, IBM IS SOLVING MORE PROBLEMS FOR MORE BUSINESSES THAN EVER BEFORE!

Saving *more* time in processing *more* business data for *more* businesses has been the keynote of IBM progress for more than 41 years. And this progress was never more marked than during the past twelve months.

In typical 1955 IBM installations: a chemical company reduced the time for producing monthly cost reports from 2,400 hours to 10 hours; a leading aircraft company now creates a master production schedule that used to take four weeks to prepare, in 24 hours, at a cost saving of 40%; another manufacturer is doing a payroll for 8,700 employees in 3½ hours!

To speed similar efficiencies for more businesses, more than 1,125 IBM electronic data

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IBM... first to put electronics on a down-toearth basis for business, is also first to offer industry and business a complete line of data processing equipment to meet its diverse needs. From the giant IBM 705 to smaller punched card data processing systems, IBM can fit your needs exactly. For the plain facts about data processing for any business—large or small—contact your local IBM representative. © IBM

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IBM

DATA PROCESSING



# EXECUTIVES AND ETHICS









Business and business men have become focal points for contemporary authors and playwrights. But do they present ethics and the competitive spirit in their true light? The author has taken a close look at business fiction and has arrived at some conclusions which could benefit other executives.

MELVIN H. BAKER

Chairman of the Board, National Gypsum Co.

ONCE AGAIN, it seems, the American business man must gird himself for the assault by the men of letters. The television writers, the novelists, and the movie writers are offering battle in what has been described as the "cold reaches of executive space."

That phenomenally successful television drama, "Patterns," is scheduled for movie treatment after two showings in the original. The works of Cameron Hawley will probably continue their popular appeal for a long time.

Evidently the writers have found a good, saleable thing in the contemporary business scene.

The successful business man, for his part, can hardly feel comfortable in the presence of this frequently unflattering reflection of himself in to-day's literature. Never very successful at selling the ideas of his own system, he is nevertheless sensitive to attacks on his system. The remarkable development of the corporate conscience and the public relations profession is eloquent testimony of this. The business man to-day, more than ever before, has good reason to ask: "Why pick on us?"

It is interesting to note that the slant of today's "business fiction" is quite a new and different one. It might be rewarding for the business man to take a careful look at it. Just what about his system is under attack? Wherein lies its vulnerability? In the first place, it's entirely logical that business should be coming in for its share of attention from the creative artists. The wonder is that such a large and important segment of our social and economic life has been so long neglected by the serious writers. Where can one find more exciting dramatic materials than in our competitive enterprise system at work?

An encouraging aspect of the new business fiction—from the business man's point of view, at least—is that it is relatively benign compared with the treatment in previous eras. Certainly it is not in the tradition of the muckrakers writing on the shabby state of business 50 years ago and more. None of the villains are cast in the unlovely mold of a Daniel Drew, a Jay Gould, or a Jim Fisk. There is not the picture of corruption and fraud and callous disregard of human rights. Nobody is bludgeoning striking employees or trying to buy off state legislatures. There is no insinuation that business is producing shoddy goods or over-pricing them.

No, the behavior of business as mirrored in the new literature is remarkably correct. The writers have no proletarian axe to grind. They have been charitable to an extent.

What, then, is the focus of the attack, if so strong a word is appropriate? What gives the business theme its interest to dramatic writers.

Take a look at the plots. For the most part

the battle is pitched on the level of upper middle or top management. The objective is the top job, or succession to the top job. The action revolves around ambitions, devious or direct, for preferment, or maybe just to keep what they've got. Somebody wins, somebody loses, and perhaps the loser dies of a coronary. And maybe the winner loses more in the end because he appears headed toward losing his soul.

But basically it is this struggle among the Olympians of management on which the interest turns. This is the essential conflict which provides the dramatic interest. And what, in simplest terms—in the terminology of business—does this struggle amount to but competition?

It seems to me that the target of the writers is nothing more than the same old strenuous competition which business men in this country have always accepted as healthy. True, it is also a process of screening out the unqualified.

But is this ruthless, when the most important by-product of competition is efficiency—which alone makes possible the production of goods and services for a mass market at popular prices, and which, incidentally, creates more jobs? Isn't this competition the living tissue of our free enterprise system?

I believe that the business man can justly claim a foul on this point. That old competitive fervor is no more peculiar to business management than it is to a museum staff, a college faculty, or a woman's club, for that matter.

It's puzzling that it should suddenly become so abhorrent to the writers, as it has apparently to many others on the outside looking in. Sometimes I wonder, along with George Washington Plunkitt, one-time boss of Tammany: "Sad indeed," he said, "is the change that has come over the young men... They don't care no more for firecrackers on the Fourth of July."

#### Fireworks for Business Men

Now it makes good sense that the fireworks in business should be a proper study for the men of letters. Certainly there are ruthless men in business as there are in any field. And, too, there are remnants of corrupt practise which hark back to circumstances in the last century.

The so-called "bait advertising" to-day is a case in point. And several years ago the Senate subcommittee on Government ethics said with perfect justice that, "influence peddlers can exist only as long as business men or others are willing to patronize them." The corruptors lie in the same bed of sin as the corrupted. Teapot Dome was as much the shame of business as it was of Government administration.

To-day the American people are witnessing those well-publicized spectacles called proxy fights. There are undertones of "raiding" and "piracy." Often the issues are murky and confused as far as the public is concerned.

I am not for a moment impugning the legality of these affairs. In fact, a little exercise like this helps to put a flabby management in good muscle tone. But mere legality can never be the measure of business ethics. We can act within the law and still be immoral and un-

ethical. The fact that most of these proxy fights are rarely fully and fairly explained to the public reflects on the integrity of business.

We, as business men, have to be a great deal more than lawful to be truly ethical and deserving of the public esteem. If anything, we should aspire to set a standard higher than society demands. Such, of course, is the influence of business, that it can. And our ethics ought to be something we believe in, and not a matter of expediency and persuasive public relations. As Frank Crane has pointed out, "If one is honest because honesty is the best policy, he is not honest at all, he is just shrewd."

No, we are not above reproach, and the writers of to-day might be dealing a lot more harshly with us than they are. Yet the occasional instances of backsliding are few and isolated. Business men to-day know that ethical management is an asset of great value. They know better than ever that their enlightened self-interest must coincide with the public interest. Is it fair, then, for the writers to postulate that the taint of a small minority contaminates the system?

The business environment is as good as any vehicle to portray the greed, the lust for power, and the overweaning ambition of certain individual human beings. But somehow the inference is always drawn that this sort of behavior is standard operating procedure in business.

This, of course, is patently untrue, although the fictional study of the decline and fall of a company vice-president may lead many people to believe it. Human relations is becoming more and more the chief concern of business, and these efforts will intensify as an acute labor shortage sets in a few years hence. The shortage of management talent is with us. Business has

done too much—for its own employees, for education, for community welfare, and national charities—to abide the charge that it has ignored human values.

There is much more to be done, of course. Yet the fact that so many people are still willing to accept the fiction of the lack of scruple in business merely underlines the overwhelming job to be done in selling the values of our business society to the public at large. We have certainly defaulted to the challenge of communication. But the untold story is not one to be ashamed of.

#### What is Lacking?

That is not the end, however. If the business system is exonerated, there may still be flaws in the individual business man which makes him a target for the penetrating writer. Perhaps the greatest single deficiency on the part of the average business man—and most Americans, for that matter—is the lack of any strong personal philosophy to provide faith to sustain him in competition when the tide runs against him.

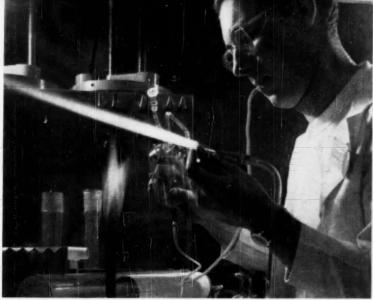
In the current novels and dramas about business the man who loses doesn't go hungry. For the most part he merely slips on the rung above. But he is broken because he has no solid grip anywhere else.

Allowing for a little dramatic license, this nevertheless is the consequence of our creed of materialism. There seems to be no goal, no rung on the ladder of achievement, at which a man can permit himself to be content. In fact, contentment is viewed as something less than a virtue. Worry, frustration, defeat—these are the rewards of the man who admits to himself that he is standing still.

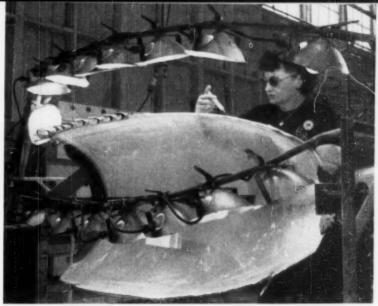
Continued on page 89

The writers' new approach to business was perhaps typified in Kraft's NBC television play, "Patterns." With no hero and no villain, the play centered on a "struggle among the Olympians of management" involving the forced resignation of a weak vice president. Good or bad, the ethics thus depicted are a part of the competitiveness of business — or are they?





New angles on an old art, plus brand new scientific discoveries, bring new business, open up new jobs. This glass blower works in North American Aviation's pioneering Atomics International division. Progress in this field will open many opportunities for many industries in years to come.



Good medicine for plastic canopies is new patching compound, applied with hypodermic syringe. It "cures" starved-out spots that may otherwise lead to rejection, is good example of small advances—easily overlooked—that add up to big overall savings in time, materials costs, and effort.

# HOW TO PROFIT FROM TECHNICAL PROGRESS

ANNESTA R. GARDNER

Industrial Editor

DOES IT SEEM like "only yester-day" since the end of World War II? In point of time, it has been a decade. But, in technological progress, it has been at least a generation. Methods and equipment that were the last word in the early post-war years are already obsolete.

Just since 1947, for instance, improvements in carbide tooling have made it possible to increase speed and depth of cut to a point where lathes need twice as much power as they did; and the speed at which heavy stamping presses can operate has been doubled or tripled.

At the same time, as William C. Newberg, vice-president of Chrysler Corp. pointed out at the recent Machine Tool Show, advances in the direction of "chipless production"—in the forming of metal without the wasteful production of scrap—may, in just a few years, make even the best metal-cutting equipment obsolete. Die casting, precision casting, powder metallurgy, shell molding, cold extrusion, and hydraulic forming are all steps in this direction—methods that minimize the amount of metal that must be cut away to produce a smooth-surfaced close-to-tolerance part.

In the chemical field, changes are taking place at an even greater rate. Production of polyethylene, for instance, was made possible by advances in high-pressure processing. But the highpressure plants were barely completed before "low-pressure" catalyst techniques came along that promise to turn out a form of the material that is even better for some applications, making new processing plants necessary to produce this

Chances are, long before these techniques have reached their peak, still other methods will come along to make them obsolete. Perhaps atomic radiation or ultrasonics will be used; or perhaps a new type of high-pressure system. Or a brand new resin may make the present ones obsolete. No one can be sure what the changes will be. But one thing is certain: there will be a change —and the groundwork for that change is being laid right now.

The start of a new year—of the second postwar decade—is a good time to stop and review your own company and your own industry to see if you are keeping up with the times.

The photographs on the following two pages show how one company is taking advantage of the new developments of the past decade and looking ahead to the future; and the checklist on page 37 will help you gage your company's progress. As the record of the past few years shows, no company can afford to neglect technological change, even though the old methods and equipment still seem serviceable. As Newberg says, "Tools no longer wear out." They simply become obsolete, and have to be replaced.

But what about the human problems involved in technological progress? Do people become "obsolete" as machines do? Is the total number of jobs being reduced? Experience so far indicates a trend in quite the opposite direction.

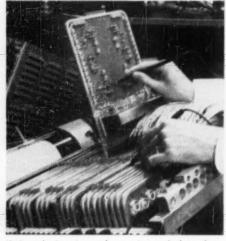
At North American Aviation the application of new technology has resulted in the formation of two new company divisions, and scores of new jobs. It has made jobs in established areas more interesting and less physically-demanding. And, by coupling a training and re-training program with technical development, NAA is not only preventing "obsolescence" of its employees, but making it possible for many of them to acquire more valuable skills and more interesting jobs than they had before.

Would the same be true in an older industry? Here is one answer: Armstrong Cork Company, which has been in business since 1860, recently took a look at its own technological progress. From a one-room cork factory, it has grown into an 18-plant operation, employing 16,000 oeoole and making 350 different products using many kinds of materials.

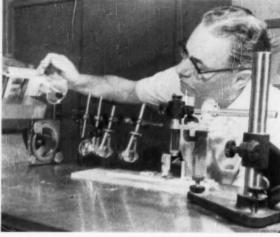
But this is the important point: Since 1945, Armstrong has been granted 278 patents (more than a third of the total it owns) as a result of work by its own staff members. And the result? Some 1,500 new jobs have been created; and, says Armstrong president C. J. Backstrand, "Many thousands of Armstrong employees are enjoying steady work at present because inventions paved the way for products and process improvements which enabled us to stay ahead of competition."

More text and photos on next page

## New Methods and Equipment



Printed circuits and transistors help reduce electronic equipment size and weight. Note slide-out panels designed for ease of testing, replacement. This is an airborne computer.



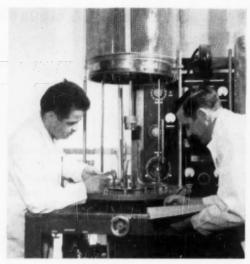
Optical systems are used by NAA engineers to study guided missile systems. In other industries, similar methods help spot areas of potential stress failure, study surface smoothness, measure dimensions of precision parts.



New visual aids, like those shown here, shorten training time for aircraft mechanics, and simplified design of the parts makes maintenance much easier and less costly.



Baby computer, connected to typewriter, records test data automatically, helps speed work, reduce errors. Girl is working from motion pictures of airplane instrument panel, taken during test flight.



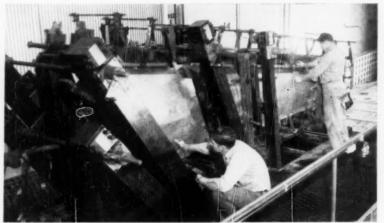
Vacuum metallizing has grown into a major industrial process since World War II. Equipment here is for research use, but standard productionline units are now available for many industries.



New testing equipment that rolls to the job gives production-line workers more information faster; prevents delays and needless errors in installing complex aircraft hydraulic systems.



Electronic controls now increase speed and accuracy of many machine tools. Here, push buttons guide router that cuts out big airplane panel sections.



Hot forming method is new to aircraft manufacture. NAA engineers use this pre-stress fabrication technique for contouring aircraft wing skins.

# Putting the new technology to work

Are you putting new equipment and materials to work at the earliest practical moment—or lagging behind while competition gets the jump?

To find out, try checking the record of your plant since World War II, as North American Aviation did in taking the photographs used here. How much has your product changed in the past decade? How many brand-new methods and machines have been installed? What is being done to assure continued progress?

Listed below is a selection of new developments introduced in the past two years. They were drawn at random from articles and items that have appeared in Dun's Review and Modern Industry. It's a brief list, and by no means comprehensive. But how many of them are now under study or in use in your plant? Quite a few should be.

Some of the items may, at first glance, seem to have no place in your operations. Don't let them be brushed aside too quickly. Titanium, for instance, often considered an "aircraft metal" because of its light weight, may well prove useful in ground-based or sea-borne equipment because of its corrosion resistance. Flame plating, which won its spurs by prolonging the life of tools and dies, may also help farm equipment and other machines. So, it's a good idea to take another look and ask your engineers:



Executive check list

Have we covered all possible uses for:

#### New structural materials and components

- Ductile titanium and zirconium
- Metal and plastic sandwich materials
- High-strength, low-alloy steels
- ☐ High-impact polystyrene, heat-resistant polyethylene, epoxy resins, expanded plastics
- High-frequency transistors, printed circuits
- Miniature batteries, motors, light bulbs

#### New finishes and coatings

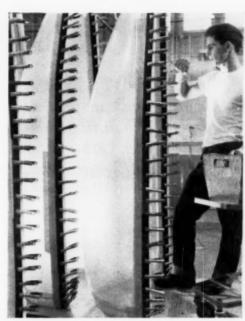
- Crack-resistant electroplates
- Porcelain-enameled aluminum—foil and castings as well as sheet and strip
- Flame-plated carbides
- ☐ Flame-sprayed oxides
- Aerosol paints and corrosion inhibitors
- Photosensitive paints and conversion coatings

#### Fasteners and fastening techniques

 □ Automatic welding and hard-facing, using electronic controls and line-following tracers
 □ Cold welding

Continued on page 73

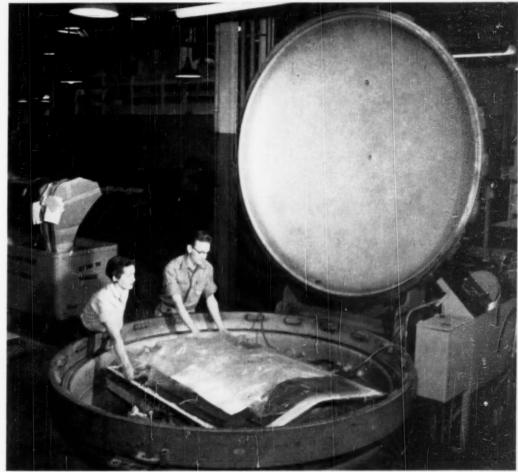
### New Materials



Plastics simplify production while they improve product performance. Here, extruded nylon hoops, chosen for resiliency, toughness, and light weight, are clamped on acrylic aircraft canopy.



Weird shapes are often far easier to reproduce in plastics than in metal. These air ducts are made of glass fabric impregnated with phenolic resin. NAA now has over 400 skilled plastics workers.



Honeycomb cores for sandwich panels are bonded in huge autoclave. Sandwich construction won its first acceptance in aircraft because combination of corrugated or foamed center with thin sheet facing offered rigidity at minimum weight. Now, such panels of metal, wood, and plastic are widely used.

# **BUILDING TO-MORROW'S MANAGEMENT**

Executive talent is not a commodity one can find in profusion on the open market and an expanding company in need of it faces a major problem. One answer is to develop abilities available in the organization.

NATHANIEL STEWART

Director, Management Development Program Government Employees Insurance Company

IN THE TRANSITION from the status of a moderate-size company to a large-size organization, the issues to be faced are these: Can this transition be taken in stride, or will it be necessary to accelerate the pace of the movement so that a strong posture will be sure in competitive business? Are there ways in which a company can move into "bigness" and yet preserve the "family spirit" and high morale so often characteristic of the smaller organization? Where shall it find the diversified executive abilities needed for the varied and extensive operations of an expanding organization?

Are communications what they should be as it moves into the transition, or will more units and longer distances block the flow of communication and impair teamwork? How can it get the specialists to think beyond their own field of specialization and to see the problems of management and administration from a companywide point of view?

What is the best way of overcoming the possible provincialism in some quarters of the organization—particularly because of the fact that many of the supervisors and middle management officials, however capable, may have served only with one company in their employment history and may have had little or no business experience elsewhere? If the company cannot or should not decentralize because of the nature of the business, how can it achieve better delegation and decision-making within the present centralized organization? These are crucial questions for any expanding organization.

It will be recalled that the Columbia University Press recently published a report of a round-table of distinguished business and professional men, entitled "Management of Expanding Enterprises." The key points expressed in this report are points which all small companies must recognize as they face a transitional period. Readers of the Columbia University Press report will recall these as the principal problems of transition and expansion: (1) recognizing the need for change; (2) finding the "easy" way to avoid a major transition—if there is an easy way; (3) top management adjustments; (4) adapting others in the executive and managerial



ranks to a new management philosophy; and (5) determining the frequency or speed of, change in the transition and expansion.

Problems always attend a company's success and growth. Personnel consultants and company directors agree that the principal problem is the search for executive talent (more, different, diverse, and improved talent) to keep pace with the company's success and growth.

It is, in truth, a kind of chain reaction: growth, new responsibilities, search for executive talent to undertake the new responsibilities, successful management and, with it, better business and more profits. Then follows the decision to expand, then more growth—and, again, the cycle of new responsibilities and the need to search for and to develop potential executives.

#### Where to Get Them

This is a happy state of affairs if and when executive talent is available. It is an unhappy and frustrating experience, however, when a company finds it necessary to shelve good ideas and to delay the launching of ambitious and well-designed plans for the future because of the lack of executive talent to take over and carry through. Top management can provide the vision, the wisdom, the "green light," the drive, and the plans—but, in a growing organization, real administrative and managerial talent is needed in all executive and supervisory levels to take the next steps into operation, direction, coordination, control, and evaluation.

It is precisely for this reason that, in recent years, we have read about and listened to many accounts of executive development programs, ranging from the small company to the industrial giants. And, it is for this reason, too, that many companies have turned their attention to the problem of managerial and executive development. It is essential if they are to expand in a thriving economy which has become increasingly competitive.

From the many accounts in management journals it is clear that there has been too much of "ashes and sackcloth" in regard to the shortage of executives. This has inspired pirating from other organizations, gimmicks to create executives in short order, the setting up of elaborate systems of identifying and selecting executives, and the canvassing of universities for recent graduates to be taken in as "crown princes" stamped as future executives for the organization. This is the difficult way, the expensive way, and the highly speculative way.

This matter of taking a good hard look at "where we are and where we may go" faces many organizations in this period of expanding enterprises. It confronts our organization, too. It is an expanding organization of several companies engaged in life, casualty and other types of insurance, as well as automobile financing. It is an organization approaching its 20th anniversary with progressively higher earnings and a rapidly increasing volume. Its staff has grown by more than 60 times. It has outgrown its physical

quarters many times. The staffing and services of its numerous departments have grown many times over the original pattern. This, then, is the background and the profile of the organization.

The company's pattern for executive development expresses a philosophy of self-development, self-reliance, and demonstrated performance. Although the company continues to recruit needed technical specialists for various functions of its insurance business, it is convinced that the search for and the development of executive talent should begin within its own ranks and on its own home grounds. It is not speculating with unknown quantities,

#### Basic Program

The program is based on the following essentials:

1. A series of case studies, discussions, and presentations in the field of management, conducted once a month from October to May at dinner sessions of the executive group;

2. Top management's genuine interest in "looking over" the managerial personnel for potential executives. This is followed by informal coaching, in day-to-day situations, in the more effective ways of administration:

3. Participation of senior officers in the Operating Management Team, the Managers' Committee, and other staff groups where problems are identified and solved. All voice their views in regard to possible improvement of policies and procedures, and participate in the formulation of operating policy;

4. The development of a nucleus of a valuable "Executive Library"—a growing collection of important books, journals, and special studies in administration, management, human relations, personnel administration, and allied fields—for the continued self-education of the individuals;

5. Principal emphasis on the man's capacity to perform as a company official in the daily administration of his department, division, or other unit. This includes a showing of his ability to meet his responsibilities, promote the best interests of the company, develop the morale and productivity of his employees, as well as improve inter-departmental or inter-divisional communications and relations within the company. The last four areas center around self-improvement, self-education, and self-reliance on the part of the up-and-coming executives. A premium is placed on individual performance and personal growth. These are the areas in which men prove their worth under combat conditions, so to speak.

As these last items are a part of the personality of the company, the emphasis here is on the first item.

The composition of the group is unmistakably clear. For the most part it consists of men in their younger years, but with the older and more experienced executives in the company keenly interested in participating too, and in seeing the younger men "ready themselves" for more responsible positions as opportunities come along.

All the men have proven abilities in their particular fields of specialization, are well-educated, and have demonstrated loyalty to the company. This is evidenced both in years of service and a willingness to "pitch in" and take over in the many emergency situations in these years of rapid expansion and mounting responsibilities.

#### Back to School

These are men who, through successive assignments in supervisory and managerial positions where they have made good, were gaining in self-confidence as administrators. There is a clear awareness that they are part of a progressive and successful company. But, with all these attributes, there was need to learn more of the art and science of management and to apply it to the problems of the business.

Transition and expansion are stages of management, and the more one learns about the best in principles and practises of management the better prepared will he be for meeting these stages and their problems. What these men had to learn would, evidently, be determined by the principal objectives of the program. And, the principal objectives of the program were structured out of the crucial questions now facing most companies which anticipate transition and expansion.

The objective, therefore, was to succeed in: (1) developing better insight into management problems of larger dimension; (2) alerting them to the important trends and new frontiers in management-especially those which are vital in the movement from a moderate-size company to a large-size company; (3) sharpening their powers of observation and analysis, particularly through actual case studies which could occur in the organization as they have in other organizations; (4) developing self-confidence in their resourcefulness and decision-making to take on and carry through large responsibilities at higher or different administrative levels in the company; (5) broadening the base of their understanding beyond their on-the-job experiences; and (6) adding to their fund of knowledge so that they could "break out" beyond the boundaries of their own field of specialization.

In all this, however, there were to be no gimmicks, no spoon-feeding, no pat or stereotyped answers out of the book, no easy formulas, and no false notions of easy management. It was a program designed to help well-educated and ambitious individuals to help themselves toward eventual careers in the senior executive ranks of the organization.

It was agreed at the outset that the monthly executive dinner sessions, October through May, would constitute two separate series. The sessions would be led by invited individuals expert in their particular management subject. To the extent possible the case method primarily would be utilized—with a combination of lecture-discussion and panel presentations from within the group. For every session there would be

## PICKING EXECUTIVES

# for their big blue eyes

Why does a company pay good money to find the best executives, then let quirks or poor policy hamper its choice? Here are some common errors.

ALFRED G. LARKE Employer Relations Editor

Most companies choose administrators on a rational basis, say personnel people, management consultants, and executive recruitment specialists. Since this article emphasizes the mistakes, many of the sources prefer to remain unidentified.

**G** REATER DEVOTION hath no woman than to knit her man a pair of argyle socks. And he had better wear them, too.

But, if he's to be interviewed that day about an executive position, let him hide them in his briefcase and change into a pair of plain ones before meeting the men whose management he's considering joining.

That, at least, is the advice of a number of specialists in executive recruitment, who deplore what they consider many irrational attitudes of executive-hunting corporate officials. The argyle sock phobia is only a minor example of what they criticize, because a good many companies don't give a hoot what kind of socks a man wears, so long as he has what it takes to do the job.

It's about as logical, they contend, as the man who paid \$100 each to have three secretarial applicants given batteries of tests, and then hired the one with the big blue eyes.

Just why company officials tend to reject men who do not conform in such minor matters is not clear, although it might make a dandy research project for some college.

Waste of executive talent and loss of opportunities to hire good men are what the recruiters deprecate in a lot of stock attitudes and practises of companies that make up their clientele.

Consider, for another example, the grievous error of the executive who goes to an interview in a mustache. It may tickle his wife, but it raises the hackles of the typical company official on the hunt for top talent.

"The man who doesn't wear garters is out, so far as some companies are concerned, and few are likely to hire an executive who goes hatless.

But what this has to do with a man's ability to handle an executive job puzzles the recruiters. They assume the prejudice against mustaches is unconscious in most cases. Where it is conscious, they think the interviewer may fear to send a man with a mustache into a small community where a similar prejudice may exist.

A frequent reluctance to hire divorced men is definitely based on that consideration; and, big town or little town, a prospective executive's wife must conform to certain standards. One recruitment concern always gives the wife what it calls "the martini test" before finally recommending her husband for a position. Possibly the recruiter and his wife will meet the prospect and his, in as relaxed a social situation as can be contrived, and Madam Prospect will be given an opportunity to display whether she knows at which martini to stop.

Such precautions, consultants and recruitment concerns consider not only reasonable but necessary. Thus, they do not find fault with their employer-clients in every respect. In at least three respects, employers' attitudes have improved greatly in recent years, they say:

A hearing aid no longer disqualifies a man. "With most employers they figure no more than wearing glasses," one says.

Likewise, the 40-year burgeoning paunch or the 50-year bags-under-the-eyes no longer flag a prospect to a stop. "It used to be," one of the experts says, "that companies acted as if all executives over 40 should be taken out and shot. That is no longer the case.

"We still occasionally run into the concern that wants a 30-year-old man with 50 years' experience, but it happens much less frequently.

"Even where they think they want a younger man, they will now often take an older one when they see what talent is available in a specific individual of more maturity. The great number of mergers has left many fine executives in positions requiring less than their full skills or promising less opportunity than their ambition demands. They are ready to change, therefore, and are often a real bargain to the company they go to.

"Only a couple of months ago, one of our clients specified a man not over 40, but was so impressed by an able man of 57 whom we recommended that it hired him and is very happy with the way he's working out."

One management "sin" mentioned by all the consultants and recruitment men canvassed is an employer's apparent inability, in a great many cases, to get it out of his head that the interview and hiring is all a one-way process—that he is doing the prospective executive a favor and that that is the whole story.

A partner in a large consulting engineer firm which is frequently asked to fill top jobs for client firms, tells it this way:

"If there is one thing above all others in which a company errs in talking to prospective executive employees, it is in adopting an attitude of condescension.

and

#### Learning the Hard Way

Many executives fail to realize what it's like to be on the other end of a recruitment interview, agency men say, but a lot are learning about it because of recent corporate mergers. These are the men who may not be squeezed out, but who realize the company needs two sets of executive staffs about as much as a dog needs two tails. So they are quite susceptible to offers from outside.

The shock comes when the prospective new employer gives them the old employment-office routine, starting with, "Why are you looking for a job?" "For example, we may spend two months finding the right man for an opening, and in persuading him that it presents an opportunity for him. We carefully negotiate with him and finally arrange a face-to-face meeting with the prospective employer.

"The first thing the man is asked, all too often, is, 'Why are you looking for a job?'

"Since he usually isn't looking for the job and certainly isn't begging for it—more likely we have had to sell him hard—this kind of question is offensive to him. He will resent being put in the appearance of an unemployed jobseeker or a man trying to jump out of his old job before he is pushed.

"He is more than likely to conclude that if the new company has no more finesse than this in its human relations, he doesn't want to join up with it.

"It comes down to this: If you are interested enough in a man to talk to him, you should try to sell him the job, not take it for granted you are in a buyer's market."

Another recruiter complained of a similar type of thoughtlessness or discourtesy—long delay by the employer in making up his mind. He tells of a top flight administrator of research projects who had been persuaded to meet with executives of a large national corporation who badly needed a man like him.

Research administrators being even scarcer than good research men, it had taken the firm a long time to find one who was willing to consider switching employers. But he came in and was interviewed up hill and down dale. For the next eight weeks he heard nothing from the company. The best he could learn about it was that the company was "still thinking it over." Eventually the call came—he had been accepted. He turned the job down, telling his contact man, "I wouldn't work for them if they had the last job in the world."

This concern, incidentally, says that only 1 per cent of the men it recommends are unemployed when recommended. Another says its placement of unemployed never has run higher than 5 per cent. A management consulting firm that is active in selection placed only one unemployed person in the last year.

Their prospects come from the employed, and mostly from the successfully employed. One specialist explains that the more successful a man is, the more confidence he has in his ability to handle a new job and to better himself in it.

"The higher a man is in the executive field," he says, "the more willing he is to listen to a proposal. We find this true almost without exception."

Another concern accepts applications from the unemployed (they may get jobs some day and become prospective clients), but seldom uses them. It, too, recruits mostly from men with jobs.

The fact that almost every vacancy filled creates another vacancy in some other company has a lot to do with the fact that management engineering firms are usually reluctant to talk



"That's just the pencil-and-paper part; next week we give him the deep-dish psychological probe."

Excessive reliance on tests to uncover executive talent may tell as much about the tester as about the testee. Recruitment experts, who can take their tests or leave them alone, are critical of employers who use tests as the sole or final arbiter of

a prospective executive's fitness for the job.

"They seem to lack confidence in their

ability to judge others," says one.

"It seems to me a man is timid who puts final responsibility for a choice on test results," says another.

about their recruitment activities and, when they talk, don't like their names used. Company B, from which they hire away a man today to fill a vacancy in Client Company A, tomorrow may become a client, too—unless it discovers that it was this very firm that once hired away one of its key men.

Some consulting firms try to avoid doing recruiting—one is said to have succeeded in refusing that kind of task for several years—but frequently they are compelled to do it in order to keep the client's substantial consulting work.

One top consulting firm even does selection for companies that are not clients for its other services, simply because this gives it good entree to another potential client. A characteristic of both consultants and specialized executive selection specialists is that they spend nearly as much effort studying a job and its requirements and potentialities as they do seeking a good man to fill it.

This enables them to do a better fitting of man to position. A company job description may be inadequate and in any case usually misses some of the personal relationships that the agencies consider in recommending a prospect. The study and the resulting careful fit are part of the justification, of course, for the fee for executive selection. That they are justified is indicated

by the growth of this kind of man-hunting. There is scarcely a major consulting concern that does not at least dabble in the business; and, since World War II, about a half dozen executive recruitment concerns have gained a firm foothold in New York, center of the activity.

Although everyone concerned, whether he be a member of the company's personnel staff or an outside specialist, is working for the company concerned, rather than for the executive whose services are being enlisted, all express great concern about the individuals they help choose.

"It is a very serious matter," says one, "to encourage a man who is well placed and getting along well in his present employment to pull up stakes and move into another position.

"We may think it a good move for him, and he obviously will think so, or he won't change. But what if he is dropped after six months or a year? The responsibility rests on us, and we are very much aware of it.

"We are naturally very reluctant to advise a change by recommending a man to the new concern, unless our survey of the situation has shown us he will fit in very well. This turns out to work to the advantage of our clients, of course, because they, too, obviously want a man who will fit well and will grow into the job."

One occasional difficulty is the company that

goes overboard for a new fad or trend. Sometimes a company will ask for "a communications man" or "an executive development man," without having gone too thoroughly into the matter of whether it needs one, or just what it expects him to accomplish.

If the company has studied its situation and really needs such a man, the recruitment specialist will do both man and company a good turn

#### \$10,000: Magic Hurdle

Annual salary of \$10,000 is the magic hurdle in executive recruitment, in more ways than one.

It's at this level and above that companies think it worthwhile to put on a careful and costly talent hunt to be sure of getting the right man, consultants and recruitment men say, although some lower-salaried jobs are now beginning to be filled this way, also.

More important to the individual is the fact that if a man is presently making less than \$10,000, it is very tough for him to get a position paying substantially more. If your present employer is paying you \$8,000, it's hard for a new one to see how you could be worth more than \$8,500, say, to him, no matter how well you seem to fill the bill.

Above \$10,000, however, it is possible to pick up as much as a 50 per cent increase in one job-switch. Progression and steady step-ups are for the under-\$10,000's.

when he brings them together. But if the company is simply following a fad—keeping up with the industrial Joneses—he will be doing neither one a favor.

The company personnel man is in no position to do anything but go out and find a man in another kind of circumstance, but an outside recruitment man is. That is the kind of situation where a company is in trouble of some kind, but unwilling to face up to it. It is not unknown, in such circumstances, for the top leadership to bring in a new man as a gesture to its critics on the board or among stockholders. He is given the job of saving the ship, but with the regular crew standing about, hands folded. If he fails, as he must, the delinquent management may be able to say, "We told you so."

This rare kind of irresponsibility is matched on the other side, of course, by the executive who negotiates rather openly for what seems a better position—not because he really wants it, but because he is trying a squeeze play on his present employers, hoping they will outbid the rival concern for his services.

Another minority situation is the small-town company, organized and owned by local merchants and lawyers, who know how to promote, how to raise money, how to get proxies, and how to vote dividends. But sometimes they are lacking in the knowledge of how an industrial corporation must be run to produce at a profit. They can get aid from a consultant in picking the right kind of manager, but it is sometimes difficult for them to realize that his skills are different from those required to run a store or win a lawsuit.

Even a company acting with the best of good will may realize it needs a new top manager and do a good job of finding one—but then neglect to orient him in what is expected of him. Often a new executive recruitee will be left to sink or swim by himself, without adequate counsel on the personal and business problems he has been brought in to solve.

"You're the expert: you fix it up," appears to be the attitude of the owners or board in such cases.

In any case, whether the executive is promoted from within the ranks or must be sought outside, techniques of selection have been greatly sharpened in the last decade. Rule of thumb choice is dead, and that's good.

Executive recruiters are cool towards tests of various kinds that are intended to determine psychological or other kinds of fitness for administrative jobs. Skeptics may feel this is because a test might replace a more costly selection process. Be that as it may, here are the points the recruitment specialists make:

1. Tests are incompetent to determine suitability of an individual, because not enough is known as to the psychological or personality requirements for an executive job. If you don't know exactly what is required, their argument goes, how can you test for it?

2. Too many managements accept tests as the decisive factor in a decision as to whether a man should be hired or not. A test may be one tool in arriving at a judgment, some agree, but it should not be the only one. One firm cited examples cutting both ways. In one case, a company was so impressed with a man's accomplishments on a variety of tests that it hired him even though a close check-up on his background indicated he was not the right man for the job. Within six months, the agency says, he had caused such havoc in the organization, he had to be eased out. On the other hand, it cited several instances of men approved all the way up the line until tests, used as a final means of selection, blackballed them. Yet, eventually placed in other, similar jobs, they made good in a large

Isolated instances are not an argument against a general proposition, of course, and some consultants and agencies either give psychological and other tests themselves, if the client wishes, or have no objection to the clients' doing so—so long as the test is not made the sole criterion of fitness.

"People who rely on tests too much seem to lack confidence in their own ability to judge others," contends one executive recruiter. "It almost appears to me a client is a little timid," another man echoes him, "when he puts final responsibility for choice on a test result.

"Tests usually show some weak points of a prospect, no matter how many strong points he has. In fact, I would be suspicious of a test or anything else if it showed a man all good. Executives are human and no human is that perfect. Yet I've seen an employer pick the few minus things in a test result to condemn a man, without giving proper attention to the great majority of plus points."

Just picking up a likable prospect on the golf course—"Why don't you drop around to-morrow and see how you like our outfit?—is out as a recruiting method. Management is becoming too complex and skilled an occupation, and good'men are too hard to find by hit and miss methods.

"That's why there is a demand for our type of service," says Richard Knight of Hoff, Canny & Knight. "Companies find it less costly and more effective to use the services of outside specialists."

To Paul Kiernan of the firm of Antell, Wright & Kiernan, one of a management consulting concern's most important services is the out-

#### Walter Mitty, Executive

When an executive's pay is already in the top brackets, it's hard to lure him to another job with nothing but higher pay as bait. Most of the increase would go for income tax, and while executives are as patriotic as anybody else, they seldom feel like switching jobs just to help out the tax collector.

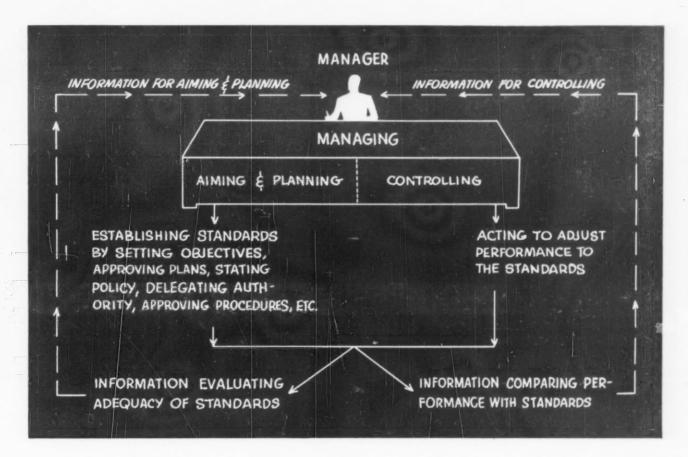
As a result, stock options and other fancy offers are used to induce them to change. One corporation, however, profited from reading James Thurber's *The Secret Life of Walter Mitty*, the story that revealed the self-romanticization that goes on inside the heads of even the most colorless of men.

It probed a reluctant prospect's dream life until it found he'd always wanted to have a plane of his own. Then it offered him a plane with his job—and got him for the same salary he'd been earning in his former position.

This demonstrates that a little psychology will often go as far as a lot of dollars, or farther.

sider's understanding of an executive's role in a company. Because the concern studies the position in terms of its relation to the organization, rather than in terms of the last man who filled the job, it may come up with a better definition of the skills required. Likewise, it can aid the company in giving the new man, when chosen, a better orientation and understanding of what will be required of him.

# The Meaning of Control



The ability to control is not something that is acquired automatically with increased authority and responsibility, nor is control a synonym for management. What is control then and how can it be developed? That question must be answered before management can become efficient, and systems effective.

#### DOUGLAS S. SHERWIN

Assistant Co-ordinator, Rubber Chemicals Division Phillips Chemical Co.

HAT EXACTLY do you mean by management control?" When this question was asked of a number of managers, in both Government and industry, the answers showed a surprising lack of agreement—surprising, since in a field for which theory has been developed to the extent it has in business management, terms should be precise, specific, and unambiguous. The literature, as one might expect, reflects about the same variety of views as entertained by management men themselves, and so does little to clarify the situation.

Is it important that managers have a clear understanding of this concept? The question almost answers itself. A manager who does not understand management control cannot be expected to exercise it in the most efficient and effective manner. Nor can staff men whose duty it is to design systems and procedures for their organizations design efficient systems unless they possess a clear understanding of management control. And certainly (though the truth of this is seldom sufficiently appreciated) anyone who is subject to control by others has to understand clearly what that means if he is to be contented in that relationship.

Indeed, when management control is *not* understood, good management is a very improbable result. This is especially true when—as frequently it is—control is identified with management, or is confused with certain devices of management, such as objectives, plans, organiza-

tion charts, policy statements, delegations of authority, procedures, and the like. The marager who believes managing and controlling are the same thing has wasted one word and needs a second to be invented. And one who believes he has provided for control when he has established objectives, plans, policies, organization charts, and so forth, has made himself vulnerable to really serious consequences. A clear understanding of control is therefore indispensable in an effective manager.

Understanding control really means understanding three principal things about it: What is control? What is controlled? And who controls? By proposing answers to these questions, I will try to frame a concept of control that will

be useful to practitioners of the managerial art.

The conception of control which I advocate can be simply and briefly stated as follows:

The essence of control is action which adjusts operations to predetermined standards, and its basis is information in the hands of managers.

We have a ready-made model for this concept of control in the automatic systems which are widely used for process control in the chemical and petroleum industries. A process control system works this way. Suppose, for example, it is desired to maintain a constant rate of flow of oil through a pipe at a predetermined, or set-point value. A signal, whose strength represents the rate of flow, can be produced in a measuring device and transmitted to a control mechanism. The control mechanism, when it detects any deviation of the actual from the set-point signal, will reposition the valve regulating flow rate.

#### Basis for Control

A process control mechanism thus acts to adjust operations to predetermined standards and does so on the basis of information it receives. In a parallel way, information reaching a manager gives him the opportunity for corrective action and is his basis for control. He cannot exercise control without such information. And he cannot do a complete job of managing without controlling.

As mentioned earlier, some students of management have defined control as what results from having objectives, plans, policies, organization charts, procedures, and so forth; and they refer to these elements of the management system, consequently, as controls or means of control. It is not difficult to understand why these devices of managing are so described by proponents of this point of view. Without objectives, for example, we all know results are likely to be other than desired, so it is assumed they function to control the results. And so it is with the other elements of the system.

Nevertheless, these elements are neither controls nor means of control. They do have, however, as we shall see later, an important role to play in a control *system*, and we can therefore examine them now in a little detail.

Certainly, to accomplish a task except through accident, people must know what they are trying to do. Objectives fulfill this need. Without them, people may work quite industriously yet, working aimlessly, accomplish little. Plans and programs complement objectives, since they propose how and according to what time schedule, the objectives are to be reached.

But though objectives, and plans and programs are indispensable to the efficient management of a business (or, for that matter, to the management of almost any human endeavor) they are not means of control. Control is checking to determine whether plans are being observed and suitable progress toward the objectives is being made, and acting, if necessary, to correct any deviations.

Policy is simply a statement of an organiza-

tion's intention to act in certain ways when specified types of circumstances arise. It represents a general decision, predetermined and expressed as a principle or rule, establishing a normal pattern of conduct for dealing with given types of business events—usually recurrent. A statement of policy is therefore useful in economizing the time of managers and in assisting them to discharge their responsibilities equitably and consistently.

#### Policy Verification

Nothing in these advantages, however, makes policy a means of control. Indeed, by their very nature, policies generate the need for control; they do not fulfill that need. Adherence to policies is not guaranteed, nor can it be taken on faith. It has to be verified. Without verification, there is no basis for control, no control, and incomplete managing.

Organization is often cited as a means of control. This detracts both from its own significance and from the concept of control.

Organization is part of the giving of an assignment. The organization chart, for example, is a first crude step in the defining of assignments. It gives to each individual, in his title, a first approximation to the nature of his assignment, and it orients him as accountable to a certain individual. But it is not in a fruitful sense a means of control. Control is checking to ascertain whether the assignment is being executed as intended—and acting on the basis of that information.

The relation between 'internal check' and 'internal control' is likewise not well understood. The two terms refer to quite different aspects of the managerial system. 'Internal check' provides in practise for the principle that the same person should not have responsibility for all phases of a transaction. This makes it clearly an aspect of organization, rather than of control. For how do we provide for internal check? We provide for it through segregating the duties of recording and those of custodianship and assigning them to different employees or groups of employees.

Assigning duties is, of course, the very essence of organizing, and thus internal check is simply organizing in a special way in order to realize special objectives. Internal control, on the other hand, observes the actual performance of duties as against the assigned duties and acts, where necessary, to correct deviations of the actual from the assigned.

Internal check and internal control are obviously both very necessary in an enterprise. But they operate differently. The objective of internal check is to reduce the opportunity for fraud or error to occur. The objective of internal control is to restore operations to predetermined standards. Internal check is thus static or builtin; it is provided before-the-fact; and its operation is preventive in its effect. Internal control, in contrast, is active and continual; it is exercised after-the-fact; and its operation is correc-

tive in its effect.

Assignments are far from defined, however, by the preparation of an organization chart. Among the ways we have for supplementing the titles and lines of authority of an organization chart are delegations of authority. Delegations of authority clarify the extent of authority of individuals and in that way serve to define assignments. That they are not means of control is apparent from the very fact that wherever there has been a delegation of authority the need for control increases, and this could hardly be expected to happen if delegations of authority were themselves means of control.

#### Manager's Responsibility

Control becomes necessary whenever a manager delegates authority to a subordinate, because he cannot delegate, then simply sit back and forget all about it. A manager's accountability to his own superior has not diminished one whit as a result of delegating part of his authority to a subordinate. It is therefore incumbent upon managers who delegate authority to exercise control over actions taken under the authority so delegated. That means checking results as a basis for possible corrective action.

The question whether budgets are a means of control does not yield a straightforward answer because budgets perform more than one function. They perform three: they present the objectives, plans, and programs of the organization and express them in financial terms; they report the progress of actual performance against these predetermined objectives, plans, and programs; and, like organization charts, delegations of authority, procedures, and job descriptions, they define the assignments which have flowed down from the chief executive.

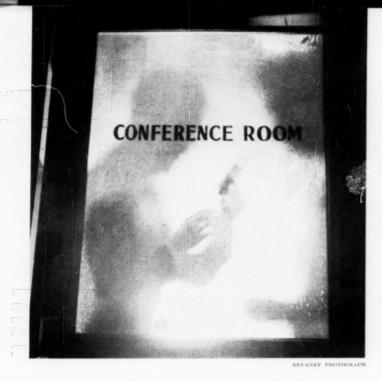
In expressing the objectives and plans of the organization, budgets are of course not means of control, for reasons examined earlier when objectives and plans were considered. Nor do budgets qualify as means of control in their function of defining assignments. Though this service of budgets is frequently overlooked, defining an assignment, as I have suggested previously, is neither a means of control nor the exercise of control.

Budgets are a means of control only in the respect that they report progress of actual performance against the program,—information which enables managers to take action directed toward bringing actual results into conformity with the program.

In the previous paragraphs I have tried to show that objectives, plans and programs, organization charts, and other elements of the managerial system are not fruitfully regarded as either 'controls' or 'means of control.' They nevertheless do bear a very important relationship to the control function. They are the preestablished standards to which operations are adjusted by the exercise of management control.

It may seem unfamiliar to some to view these

Continued on page 83



CONFERENCE leaders have a great responsibility to their company and to their conferees. It is their job to make sure that the hours spent behind the doors of the conference rooms are not wasted, that the questions in point are dispatched with smoothness. But conferences start long before the actual meeting and here are guides for handling a successful one.

# CONFERENCE - Profit or Loss?

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DEVANEY PHOTOGRAP

IF, "conference" is synonymous with wasted time, long-winded speeches, and bull sessions which accomplish nothing and get nowhere, why does industry continue to use them? Why do executives put up

with their high costs in man-hours and aggravation? Simply because conference procedures are necessary to achieve their objectives and because they do not know how to conduct conferences more efficiently.

Conferences, conducted as described herein, can be a most stimulating and effective method to catch the distillation of the individual and aggregate knowledge of the management team. Amazingly, the conference can be an important means for the efficient development of solutions to problems—quickly and at a low cost. At the same time, a poorly designed conference can be one of the greatest wasters of time and ability.

It is not unusual in a conference scheduled to run one hour for the conferees still to be wondering after 45 minutes what it is all about, what they are expected to do, what is the problem to be solved, or what is the background information that is required.

If, by any chance, these questions are answered

after 45 minutes, there is only fifteen minutes left for the conference itself—a 75 per cent waste of the conference time. What has happened, of course, is that the conference has not been properly planned and because it turned into an interview of the conference leader rather than an interview of all the conferees.

Obviously it takes planning to reach the objectives set for the conference quickly, efficiently, and definitively. It means designing an agenda that will permit the conference to proceed to the goal within the allotted time. It means a proper orientation of the conferees prior to the conference. It means the avoidance of false assumptions concerning both the conferees and the subject.

During the conference it means creating and maintaining an appropriate atmosphere; it means guiding the group effort within the bounds of the established agenda; it means stimulating the participants to contribute to their fullest ability.

The first step in designing the agenda is to write down the general objective of the conference. The general objective is the complete solution of the broad, over-all problem faced by management. The general objective is *not* the conference subject. To use the general objective as the subject matter of a conference is the common error made by conference leaders.

For example, management might have the problem of coping with a decline in sales and so the general objective of the conference would be how to increase sales. If this is used as the conference subject most of the time will be spent in answering questions, ironing out misunderstandings, eliminating irrelevancies, and so forth.

The second step in setting up an agenda is to state the objective in the form of a question. Using the same example, this might be, "How can we increase sales?" The purpose of stating the objective in the form of a question is not only grammatical, but is designed to discipline the thinking of the conference leader in planning the conference. It also forces him to think up answers to the specific question.

Begin the question with the word who, what, where, when, why, or how. End it with a question mark. Why be so technical? Because the simple phrase "Increased sales" does not have the psychological effect of truly stimulating people to reach a definite objective . . . it does not ask for and demand answers.

The third step in reaching an agenda is to list as many answers as possible to this question. In many instances the list of answers can be expanded to cut across virtually every operation of the company. Such a long list of questions clearly indicates why a general question is too broad for an effective conference. And yet, conference leaders go into conferences without realizing the implications of the problem they intend to discuss.

Let us assume in step three that we have listed

the following answers to our sample question "How can we increase sales?"

- 1. Reduce production costs
- 2. Increase advertising
- 3. Give better customer service
- 4. Improve packaging
- 5. Improve product

These, of course, represent only a small number of all the possible answers that could be listed. But even these would be too many to try to cover in a single conference. The next move is to select one of them and rephrase as a question.

Suppose we select the fifth one and rewrite. It as, "How can we improve the product?" The process of listing as many answers as possible to this question is now repeated. Again, one of these answers is selected and rephrased as a question and as many answers as possible listed.

#### Center of Interest

The conference leader continues this repetition of proceeding from the general to the specific until he comes to a question that represents a small enough segment of the original problem to be handled in one conference unit. The conference leader can recognize this stage when he finds he has no quick and ready answers.

It is clear, of course, that the answer produced by the conference to this final or refined question is not the entire solution to the over-all problem. It is merely one possible, and partial, answer. Having found this answer to one of the many questions implicit in the over-all problem, another of the questions may be selected and a conference planned around it.

The solution to a major problem results from a series of related conferences. The important point is that only one conference question be discussed at a time. This is the secret of getting and keeping a conference meeting on the beam.

It might be said that this whole process is unduly complicated and time-consuming. The telling is much more complicated than the doing. And mark this—if the conference leader does not do this in advance, then these steps are gone through at the conference anyway with a far greater waste of time.

When the conference leader has finally arrived at what seems to be a suitable agenda, it must be reviewed in the light of what he knows about the conferees. This may lead to modifications in the agenda, in the conference group, or in both.

The size of the group is especially important. If the group is too large it will be difficult to achieve complete participation in arriving at a solution. And participation of all conferees is important since only thusly can we stimulate their interest, provoke creative thinking, and utilize their experience and ideas. If it is too small, the conference may fall short of its objective because of inadequate representation. The optimum is a well-balanced group.

There is also, of course, the need to consider the limitations that are inherent in the conference situation. The conference leader should ask himself whether the problem can be solved; will



Water, flowing unimpeded and swiftly, will create chaos, destroy communications, disrupt traffic, and in other ways upset the smooth flow of life. Such a disaster means losses. Similar trouble can occur in the business world when a flood of words at the wrong time goes uncontrolled and unregulated.

the conferees have the proper facts; will they have the skill and capacity to solve the problem; will the group be hostile, warm, skeptical, or rigid. The answers to these questions will be especially helpful.

Having prepared what appears to be a satisfactory agenda, it is important that a copy of it be made available to each of the conferees. This should be done far enough in advance to allow ample opportunity for each to prepare himself for the discussion in which he is expected to participate.

Not only should each man have a copy of the question to be considered, but it is also desirable to provide some information as to why and how the question was selected. This means describing the broad, over-all problem that lies behind the conference question. It involves some discussion of the way this broad problem was finally narrowed down.

Perhaps this background information may seem irrelevant, but it can save a considerable amount of time in the conference itself. For one thing, it may help to avoid long discussions as to why this particular question was selected rather than some other apparently related question. It will also serve to give a frame of reference in which the conferees know they are to operate.

It is rather obvious that the notice carrying the agenda and the background information should also state clearly the time and place.

Another item that might well be included is a list of all those who are to attend the conference. This may save time in introductions and will help to hasten the feeling of informality that should exist in all conference discussions.

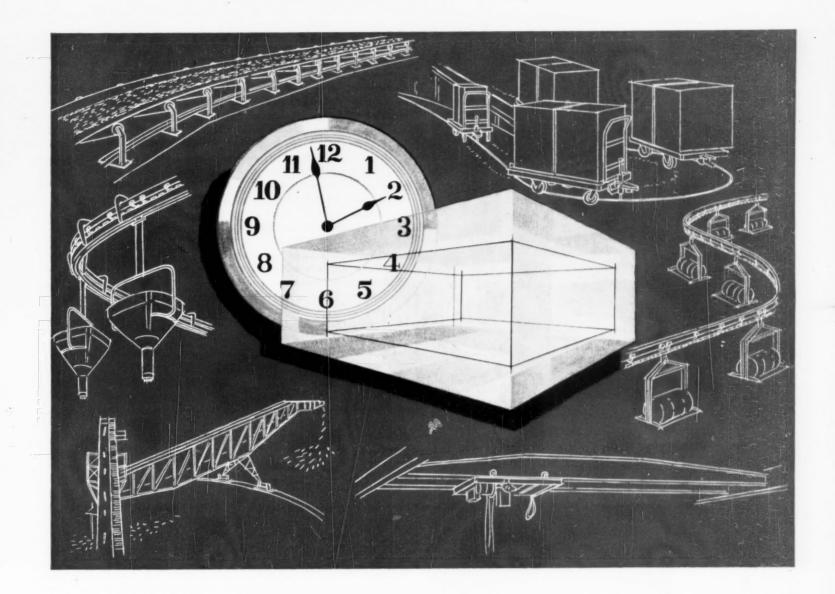
If special material, data, or records are to be brought to the conference this should also be noted on the advance information sheet. In brief, it should provide enough information so that each conferee will know where he is to be and at what time; who the other people are who will attend; what he should bring with him; and what is expected to be accomplished.

In all this preparation for the conference there is the constant danger that the conference leader may take some things for granted. This may be particularly true of a man who has attended a number of well-run conferences, but has seldom if ever served as a conference leader himself. In the well-run conference the leader does not assume a dominant role and the session seems to progress smoothly with little apparent effort from the leader.

Such experiences can easily create the false impression that conference leadership consists of nothing more than tossing out one or two initial questions to get the thing started. The uninitiated man seldom realizes that a considerable amount of work has been put into the project by the leader long before the session starts. The full realization of this often comes when he finds himself trying to lead a group that provides questions but no answers, that moves in several directions at once, and that never reaches a satisfactory conclusion.

To avoid this kind of embarrassment the conference leader must free himself from any false assumptions about the group or the conference question. He must know rather than assume that the conferees have experience, ideas, and information which is germane to the conference question. He must be sure that the conferees clearly understand the ultimate goal and the question specifically; that he has made them understand what is wanted. He must be convinced that the goal is reasonable and reachable.

The conference leader cannot assume that the conferees intend to and will speak freely with-Continued on page 50



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#### CONFERENCE—PROFIT OR LOSS?

Continued from page 48

out substantial encouragement; that the conferees intend to co-operate and are free of rivalry and jealousy; that they clearly understand and know the goal of management; that a solution to the problem will positively be reached; that the conferees are indifferent to feelings or immune to hurt; and that they will come prepared.

Lack of understanding of the conferees and false assumptions about them and their abilities can often serve to wreck a conference for which the leader has made painstaking preparations in establishing an agenda. Each man attending a conference should have a contribution to make.

To get the full contribution of each participant is the task of the conference leader. To perform this task the leader should know both the question and the men who are dealing with it. He must know their organizational positions and goals in the company; what they want to accomplish for themselves and what they fear to reveal or talk about. This information must be gathered prior to the conference.

Problems will still arise in the conference, but an adequate preparation is the best and often the only insurance for a speedy settlement of those problems.

A good conference introduction establishes the atmosphere and tone of the conference, A poor introduction results in a tremendous waste of time and confusion among the conferees. In presenting the introduction the conference leader should not assume that all the participants have read and absorbed the information that was made available.

The introduction should include an explanation of the whole background of the problem. There should be a quick rundown of the questions that this problem involves and a summary of the steps that have been followed in selecting the question the group is to deal with. It should be pointed out that the other questions related to the major problem will be handled in other sessions, but that this session will be limited to one.

The group should be told that this is an attempt to stimulate creative thinking which consists essentially of trial and error. Point out that trial and error always involves some ridiculous, illogical, or impractical ideas, but that it is necessary to express such ideas because they often act as stimulants to the general thinking. The purpose of all this is to create a permissive atmosphere which will encourage all the participants to speak freely.

It is especially important that the conference leader avoid any suggestion that he is an expert; that he can or will judge the value of any ideas that may be offered by the members. It would be good if the members themselves could be persuaded to cast aside private notions as to the validity of any ideas presented simply because they have thought of them. The conference should be considered a place where all ideas can be expressed.

As part of the equipment of the conference there should be a device that will enable the leader to carry visually all the contributions of the conferees. This might be a blackboard or it might be a flip chartan oversize writing pad on an easel which can be used with a crayon. Whatever is used, it should be large enough for all the conferees to read easily. The advantage of the blackboard is that erasures can easily be made in correcting or modifying statements. The flip chart is, however, to be preferred because it can usually carry more material than can be put on a blackboard, and no erasures are necessary, thus a continuing record can be kept.

In either instance, the basic question should be written at the top before the conference starts and the purpose of the chart should be explained. It will be used to register the combined thinking of the group and will constitute a record of the meeting so that nothing is overlooked.

It might be good to mention here that the leader should be particularly careful to record all suggestions. If he wishes to maintain the feeling that he is not an arbitrary judge or expert, he must do so regardless of his personal feelings about them. Failure to record a suggestion from a participant may be tantamount to telling that man his idea is worthless. As soon as a man feels that his ideas are not worth listing he will withdraw mentally

if not physically. Such withdrawal may prove contagious to other conferes and even infect others in the company.

the board. It should involve a categorizing of the various points that have been made. The free flow of ideas from the group will not come

The chart will focus attention of the group on the conference question since it will be before them at all times. It is an excellent device for keeping the conference on the beam.

#### Co-operation Now

The actual procedure from here on is very much like the steps the conference leader followed in arriving at the agenda. The main difference is that he now will have the co-operative effort and the broader experiences of a group in arriving at answers. The conference leader proceeds by questions directed to the group or to specific conferees. "Yes and no" questions are to be avoided since they stimulate no informative answers or discussion. The leader should pass questions back and forth among the members of the group. If the leader hogs the time by answering questions, experting, lecturing, or holding conversations with one man at a time, he will kill discussion and the contributions of the group.

Just as the chart can be helpful in keeping the discussion within the range of the conference question, so can it help in handling the timeconsuming discussions that evolve from ambiguities, misunderstandings, or differences of opinion.

When arguments or discussions arise that are centered upon the meaning of a word or a difference of opinion, the differing viewpoints of the people involved should be written on the board. When each is satisfied that his views are correctly presented the area of disagreement may be automatically eliminated. If differences still exist, the leader can simply put a question mark after each statement showing that the statement has been made but has been questioned. This will often satisfy those involved.

Periodically the conference leader should summarize what has been done. This can often be done when the progress of the conference hits a temporary lull. It is a device that not only serves to stimulate further thinking, but also jogs the memories of the participants concerning what has been accomplished.

Summarizing is more than merely reading what has been listed on the board. It should involve a categorizing of the various points that have been made. The free flow of ideas from the group will not come in an orderly sequence and it is the job of the leader to rearrange them in logical groupings when presenting the summary.

By classifying the ideas in the summary it is sometimes possible to uncover categories that have been completely overlooked. New areas of thinking can be opened which would have remained hidden in the long list of varied ideas. The summary also reflects duplications which frequently occur when the ideas are flowing fast. It can also help to dispel some of the arguments and disagreements that were previously listed but not resolved.

#### Summing Up

There should always be a final summary at the end of the conference so that each member can clearly see what has been accomplished. While it would be good if this final summary could remove all disagreements that may have arisen, it should at least clearly delineate the areas in which the members have agreed to disagree. The members should, of course, be made to feel that their participation has been sincerely respected and appreciated and that a final report based on the information on the chart board as presented in the concluding summary will be made available to each as soon as possible afterwards.

The procedures set forth here may seem cumbersome, but once conferees have been exposed to them, they will often insist that they be used. The full advantages of the procedures and the use of the chart board cannot be realized until tried.

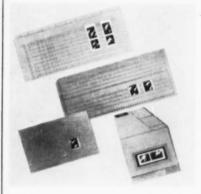
In any event, these steps will be followed in every conference and the question is primarily one of whether the leader wishes to follow them consciously before and during the conference or whether he wishes to have them develop uncontrolled within the conference itself.

A word of caution: The "bag of tricks" outlined herein will not work if it is used to exploit or manipulate a group. A group is quick to sense insincerity and to resent it. Sincere appreciation and respect for the conferees and their ideas and feelings is for the effective conference.

THE END

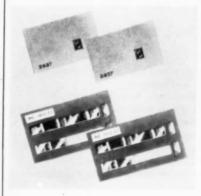
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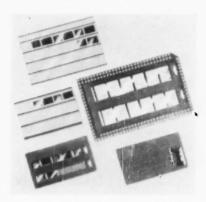
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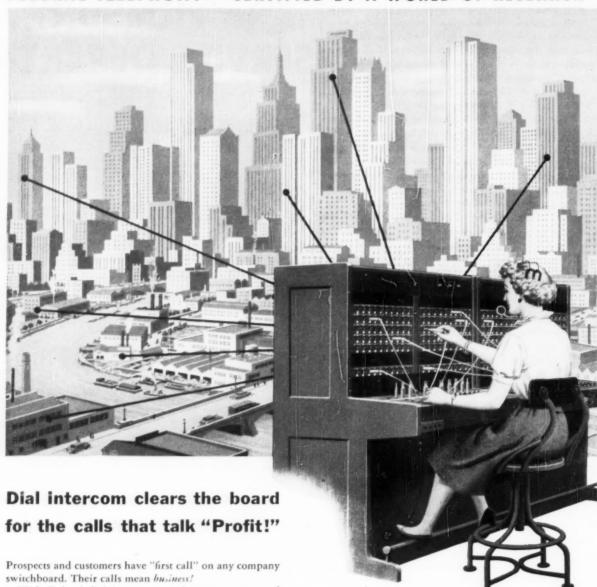
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## HIGHLIGHTS & sidelights

comment by

Hooesta R. Gardner

#### How soon the peaceful H-bomb?

Are uranium and thorium on the way out even before they come in? Can we tap the tremendous energy released by the fusion of hydrogen and other lightweight atoms? And what about solar energy? Is the sun-powered engine just around the corner?

Ever since the Geneva Conference on the Peaceful Uses of Atomic Energy, the world's leading scientists have been doing their best to answer these questions. They've come up with no firm time table. But they have done much to clear away the confusion imposed by secrecy and wishful thinking.

At first glance, thermonuclear

power seems mighty attractive. It would involve relatively abundant raw materials like heavy hydrogen and lithium, it could produce tremendous amounts of power, and it might even be less dangerous than our present uranium-fueled, fission-type atomic power plants. There's just one difficulty: Nobody seems to know how to create a thermonuclear reaction which will maintain itself without energy continuously being supplied from an external source.

So far, it seems, fusion reactions have been made to take place only when spurred by the billion electron-volt kick of a bevatron or cosmotron, or by the million-degree heat of an exploding A-bomb. The

#### It's easy to see he's going to be an oil man

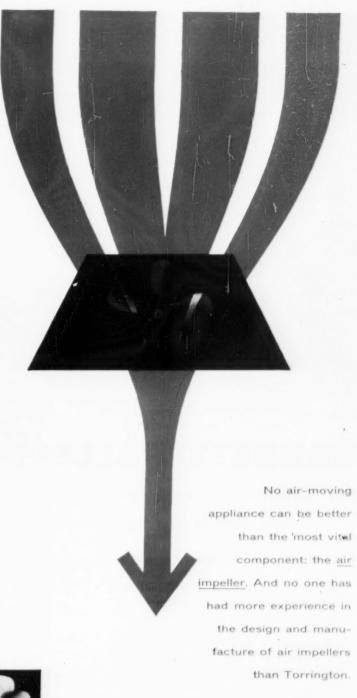


Conservationist makes sure that no precious material will go to waste.

So says Cities Service Company as it light-heartedly captions these cartoons in its magazine, Service. Besides the two shown here, the series includes: the secondary recovery man—deftly snaring an extra piece of cake when mother isn't looking; and the transportation expediter—removing all the dishes from the dinner table in one precariously balanced stack. Got a future oil man in your house?

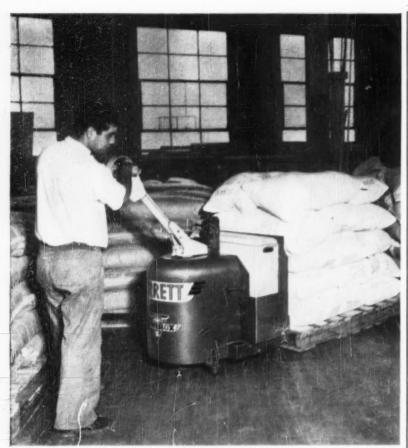


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former means giving more energy than we get. And, if a high-temperature reaction is to be used, some way must be found to contain or enclose a reaction that liberates enough heat to gasify practically every material on earth.

There is hope, though, that these problems can be solved. At the National Industrial Conference Board's fourth Annual Conference on Atomic Energy in Industry, Henry DeWolf Smyth, former A. E. C. Commissioner, indicated one possible route: application of electromagnetic forces to confine the reacting gases. There may be other ways.

But harnessing the H-bomb will call for some entirely new scientific discoveries, and it's likely to take quite a while.

Right now, as Dr. Hans Thirring of Vienna's Institute for Theoretical Physics told the NICB meeting, "the uncertainty about how to produce a controllable thermonuclear reaction makes one doubt even the advantages that have been attributed to it."

#### Can we put the sun to work?

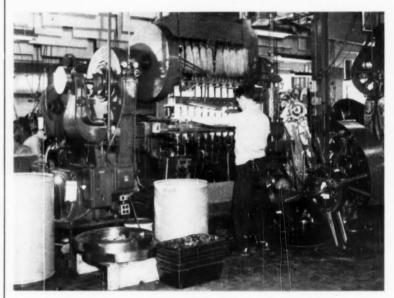
Compared to taming the H-bomb, capturing solar energy seems simple indeed.

At the first International Conference on Solar Energy, sponsored by the University of Arizona and Stanförd Research Institute, speakers proudly noted that engines and pumps have already been operated by the sun's rays. Metals have been melted in solar furnaces (see July, 1954, page 36). Houses have been heated by solar devices.

Bell Telephone Laboratories is proving that the solar battery has a real place in telephone communication (see October, 1955, page 33); and experiments conducted by American Gas & Electric Company indicate that a solar-powered heat pump might well prove practical for water heating as well as comfort air conditioning.

Still, solar energy is a long way from broad-scale industrial use. The low intensity of solar radiation, and our inability to control it, pose severe problems from a cost standpoint at least.

For the present, a good many scientists are thinking of solar energy mainly as a secondary power source; while admitting that it may well prove practical for primary use where power requirements are low (as in the Bell solar battery; or, perhaps, in a transistorized portable radio); or in rural areas where there is plenty of low-cost



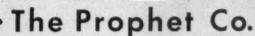
From shoes to electronics

This ten-station unit is used by Volkert Stampings, Inc., to produce deepdrawn, square-sided cans for the electronics industry. But show manufacturers, too, should find the equipment has a familiar look. It's an eyelet machine, made by Waterbury-Farrel. A good many manufacturers, in industries far removed from shoe production, are finding this simple but versatile machine can help speed production and cut costs. In addition, Volkert reports, because use of the eyelet machine permits redesign from welded to seamless construction, it helps improve appearance and performance.

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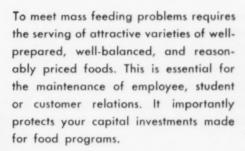
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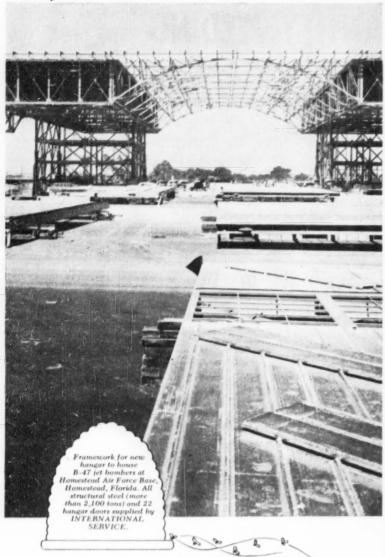


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acreage for spreading out radiationcollectors.

Recognizing these limitations, J. E. Hobson, Director of Stanford Research Institute, sums up the present energy situation this way:

"Much has been said about the importance of energy in the future economic development of nations. Too much has probably been said about the early effective application of both atomic and solar energy. . . We should keep our hopes within reasonable bounds."

These sources of energy are within our reach, he believes, and we can not and must not ignore them. But we must also be patient and recognize that these are long-term projects - the uranium-thorium power plants as well as the thermonuclear and solar energy machines. This is no time to discard the coal stoker or shut down oil pipelines.

#### Pay dirt

Maintenance-conscious business and industrial firms are buying more than 70 million pounds of sweeping compounds, nearly five million gallons of liquid floor cleaners and wax strippers, and about 10 million gallons of wax emulsions a

That's the report of the Chemical Specialties Manufacturers Association on a survey that covered some 70 per cent of the U.S. producers of such compounds. And, though production in many businesses dropped off in 1954 as compared to 1953, sales of these compounds increased-more than 10 per cent on the average,-in 1954, and final figures for 1955 are expected to show even greater gains.

What does it mean? It's a pretty strong indication that management has recognized the value of cleanliness, and is willing to spend the little that can save a lot on building upkeep.

Is your company using its share of these materials-and using them right? One way to find out is by making sure you are represented at such trade displays and conferences as the Plant Maintenance Show (being held this year in Philadelphia's Convention Hall, January 23-26). Now that industrial sanitation is, at long last, becoming a science, it deserves the same attention as do manufacturing tech-



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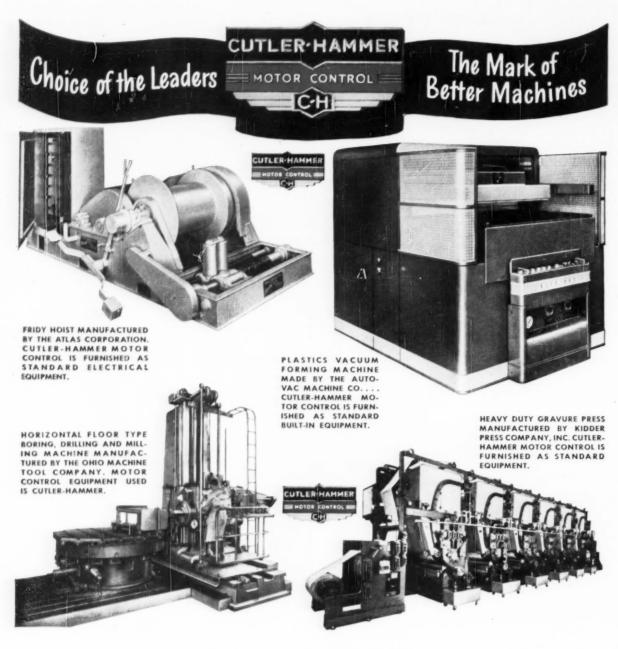
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## The truth will out

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It is written in the Encyclopedia Britannica that, "woman was no doubt the first beast of burden." While disinclined to think of our distaff

ancestors as bea of the transports of some of the a	east of burden." While disinclined to the asts, we are impressed with the progress ation industry. Here are questions to test spects of transportation. and answers are on page 95.	"One Bunn Tying Machine does the work of at least 5 hand tyers,"	
1. The transportation industry employs roughly this proportion of all non-farm workers:	7. The railroads transport more intercity freight than all other carriers put together.	13. Sailing vessels are still in use by the United States merchant ma- rine.	says R. E. Lamkin, LAMKIN LEATHER CO., Chicago
☐ 1 per cent ☐ 10 per cent ☐ 3 per cent ☐ 20 per cent	True False	☐ True ☐ False  14. Name the two federal agen-	"The Bunn Package Tying Machine has reduced our packaging costs tremen- dously, and has eliminated all shipping room bottlenecks," reports Mr. Lamkin,
2. The proportion of operating businesses in the transportation industry is closest to this:  3 per cent 10 per cent 20 per cent		cies concerned by the promotion and regulation of civil aviation.	Vice-President of the country's largest producers of leather golf grips. "We con- sider the Bunn Machine one of our most valuable pieces of equipment." Speed and economy are only two of the many advantages Bunn Tying Ma- chines offer businesses of every kind. Check these others
3. How much of the national income is produced by the transportation industry?  5 per cent 10 per cent 20 per cent	8. If all the automobiles produced this year were placed end to end, they would form a line approximately this long in miles:    5,000 14,000 27,000	15. The taxes on a new car, ready for use, constitute this proportion of the purchase price:  ☐ 7 per cent ☐ 28 per cent ☐ 14 per cent ☐ 35 per cent	Automatic adjustment to any size or shape; proper, uniform tension on every bundle, package or box; tight knots that are slip-proof and tamper-proof; right amount of twine on every package eliminates waste; simple, fatigue-less operation requires no training, increases employe production; easily mosed to any work area.
	9. For every 100 persons employed in this country there are roughly this many cars on the road:  25	Travalet Acet S	Whatever your product, whatever your business anything that can be tied by hand can be tied faster, better, more economically with a Bunn Package Tying Machine.
4. In 1935, almost 700,000 passen-	10. The number of miles of surfaced highway in this country compares this way with the number of		BUNN
gers took a plane trip; this year the number will be closest to:  500,000  10 million 1,000,000  30 million	miles of railroad track:  the same five times as large ten times as large  11. Roughly this proportion of all	16. The first transcontinental railroad was completed in 1869 when which two rail lines were joined at Promontory, Utah:  ☐ Union Pacific ☐ Northern Pacific	B. H. BUNN Co., Dept. DR-16 7605 Vincennes Ave. Chicago 20, III. GET THE WHOLE STORY Send today for this fact-packed booklet, which illustrates the
5. The domestic airlines fly more ton-miles of freight than they do passenger miles:  ☐ True ☐ False	families in this country own no automobile:  10 per cent 25 per cent 50 per cent	☐ Central Pacific ☐ Monongahela  17. Of all the automobile drivers,	MAIL THIS COUPON NOW  B. H. Bunn Co., Dept. DR-16  7605 Vincennes Ave., Chicago 20, III.
6. Match the invention with the name of the inventor:  a. macadam   Daimler	12. Before World War II, about 35 per cent of all transit passengers in the United States traveled on	women constitute this proportion:  10 per cent 50 per cent 66 per cent	Please send me a copy of your free booklet which shows how Bunn Machines can save time and money in my business. Name
b. air brake	city buses: last year the proportion was closer to:	18. The state with the largest number of car owners is:	Company
d. motorcycle Sikorsky e. bicycle McAdam	☐ 10 per cent ☐ 40 per cent ☐ 25 per cent ☐ 60 per cent	☐ New York ☐ Texas ☐ California ☐ Michigan	CityZone_State



THIS U. S. NAVY Arctic task force was equipped with Nickel-aluminum-bronze propellers. Inco research helped develop this alloy.

# Tough enough for Arctic pack ice ... ship propellers with Inco Nickel in them

The U. S. Navy has now "crashed" the Arctic Circle. "Crashed" it after a grim, grinding battle with Arctic cold and ice.

Hurtling 126 ships—greatest polar expedition of all time—through waters north of the continent, it moved in men and equipment for Distant Early Warning radar stations of the DEW line.

During this gigantic "icelift," the Navy kept ship propeller troubles to a minimum. This was hard to do because some metals get brittle in the frigid Arctic. Then propellers bend, sometimes fracture, sometimes break, in the crush of hardpacked pack ice.

What the Navy did was to put

Nickel-aluminum-bronze propellers into part of the fleet.

With tough corrosion-resisting Inco Nickel in them, these propellers stood up (one was damaged, but drove its ship home). They didn't lose their toughness in icy Arctic waters. They didn't get brittle. Nickel-aluminum-bronze blades didn't break—even when the pack ice was heavy enough to stop a ship's main engines.

#### With Inco Nickel in them... metals perform better, longer

Your proof from the Arctic is shown above. For further proof, write for "The Romance of Nickel." This 65-page booklet is free. The International Nickel Company, Inc., Dept. 5e, New York 5, N. Y.



ARCTIC SKYWATCHER—Inco Nickel helped the Navy move in men and equipment to build these Distant Early Warning radar stations in the frozen Arctic.



... Your Unseen Friend

THE INTERNATIONAL NICKEL COMPANY, INC.

# xecutive BOOK

THOMAS KENNY

Here's a rapid run-down of the very latest in business reading:

- Where to get a quick answer to a business puzzler
- How the National Bureau of Standards serves industry
- How market research is producing profits now
- The inside story of key economic indicators and how they

#### Unruly Rulers

THE STORY OF STANDARDS by John Perry. Funk and Wagnalls Company, 153 East 24th Street, New York 10, N.Y., 271

An inch is an inch or so we assume. But in actuality there is a small variation between inches in this country and those in England. A few decades ago there were four different kinds of feet (not including pickled pigs') in Brooklyn alone and all of them were legal for measuring purposes.

These are but a few of the facts presented in this sprightly story of man's strug'gle over the centuries for reliable standards. For since the development of modern industry and science, man has become the measurer of all things.

Told from the vantage point of the National Bureau of Standardswhich is far more important than most people realize—this absorbing volume provides an easy introduction to the world of technology in which standards are the basic binding force.

#### Inside Information

MEASURING BUSINESS CHANGE by Richard M. Snyder. John Wiley and Sons, Inc., 440 Fourth Avenue, New York 16, N.Y., 382 pages, \$7.95.

Subtitled "A Handbook of Significant Business Indicators" this valuable volume brings together descriptive information on the most

popular economic indexes, which are watched closely by alert business men for signs of coming changes in business activity. It takes you behind the various economic indicators and shows in detail how they are put together and what goes into them. If you understand the size and composition of the sample on which they are based, you will find indexes much more useful for your particular purposes and much easier to handle.

If you are one of the few who still think that GNP means "grand new party," then this book is required reading.

#### Shares for All

PROFIT SHARING FOR SMALL BUSI-NESS by J. J. Jehring. Profit Sharing Research Foundation, 1718 Sherman Avenue, Evanston, Ill., 53 pages, \$1.

In large business, profit sharing is usually thought of as a means of improving worker security, thus reducing turnover, boosting morale, and creating a general feeling of partnership between management and employees. In small business, the production incentive aspect of profit sharing is often the primary consideration. In addition to the changes in the tax code, the popularity of profit sharing in small business has been attributed to the need for an employee incentive in situations in which production bonuses and other direct incentives

would be impractical because of the small size of the work force.

In this study the author has examined closely the profit sharing plans of 78 small companies (less than 100 employees) in order to discover the areas of strength and weakness in their operation. While both cash and deferred plans are included, the stress is upon cash plans which are more popular in small business.

Since profit sharing has been growing at the rate of about 1,000 new plans each year, and the fastest growth has been in small business, this new booklet which is supplied with a checklist, sample plan, and other essentials should be widely popular.

#### Down on the Farm

CAN WE SOLVE THE FARM PROBLEM? by Murray R. Benedict. The Twentieth Cen-tury Fund, 330 West 42nd Street, New York 36, N.Y., 601 pages, \$5.

In most areas of the world, the farm problem is one of scarcity and lagging production. But in this nation, staggering stockpiles and prodigious productivity symbolize the proportions of the problem.

Agricultural economist Murray R. Benedict of the University of California and a special Committee on Agricultural Policy (which included the well-known economist Edwin G. Nourse and others) have brought their powers on concentration to bear on this very com-



plicated problem. Although the Federal Government has spent \$20 billion during the past two decades on agricultural aid, the plight of the farmer has worsened steadily in recent years and further drops in farm income are generally expected this year.

Besides untangling the many

#### **Big Pump Performance** In Less Space



coolant pump saves space with no sacrifice of performance or depend-ability. Easy to install discharge above self-mounting flange — wide viscosity range, ABRASIVE PROOF. Sizes for various immersion depths. Here's the pump to "go steady" with your modern machine tools.

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- chemically tested
- free of harsh alkalies
- made with highest grade, edible coconut oil.

Let your nearest West representative show you why WEST quality Liquid Soaps are economical, too. He'll also be glad to show you our modern line of individual dispensers, soap systems and other washroom equipment. Just write. Or call your local West office.

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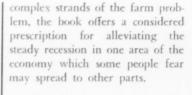
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In Canada: 5621-23 Casgrain Avenue, Montreal



#### Here's the Answer

BUSINESS INFORMATION: HOW TO FIND AND USE IT by Marian C. Manley. Harper and Brothers, 49 East 33rd Street, New York 16, N.Y., 265 pages, \$5.

Out of her thirty years' experience as Business Librarian in the Newark (N.J.) Public Library, Miss Manley has written this volume which fills a long-standing gap in the business bookshelf. Whether you are seeking information on markets, business conditions, labor relations, or any of the many other topics of real concern to business, this volume will point the way to the most reliable sources.

The author shows you how to get information from trade associations, government bureaus, industrial directories, and of course, business libraries. Small companies, unable to support their own business libraries, will find the volume particularly useful. It provides straight-forward directions for locating the basic material without which business could not operate—information.

#### On the Brink

WHAT THE BUSINESS EXECUTIVE SHOULD KNOW ABOUT CHAPTER XI OF THE NATIONAL BANKRUPTCY ACT, by Benjamin Weintraub and Hurris Levin. New York Credit and Financial Association, 71 East 23rd Street, New York 10, N.Y., 55 pages, \$2.

To keep the auctioneer away and stem the tide of red ink, many small companies manage to keep operating under this provision of the National Bankruptcy Act. The special problems this situation creates for creditors and others are discussed in simple terms in this new booklet.

#### The Big Pay-off

MARKETING RESEARCH PAYS OFF, edited by Henry Brenner, Printers' Ink Books, 42 Memorial Plaza, Pleasantville, N.Y., 372 pages, \$6.

Readers who are impatient with business books which concentrate on abstract principles without ever getting down to cases, will be more than patient with this new volume. For it brings together forty case histories of profitable consumer and industrial market research as it is practised to-day.

Each case history poses a puzzling problem and then demonstrates how the company reached a solution by using the modern methods of market research. Whether you are seeking a new market for an old product or an old market for a new product, this collection of success stories will provide you with significant clues on how to approach the target.

#### For Foremost Foremen

THE FOREMAN'S HANDBOOK edited by Carl Heyel. McGraw-Hill Book Company, 330 West 42nd Street, New York 36, N.Y., 578 pages, \$6.50.

This is the new, third edition of a basic yet practical work tool for plant foremen. It provides foremen with the informational where-withall for carrying on their daily duties, while preparing them for advancement at the same time.



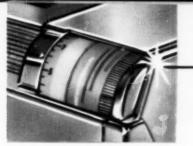
HENCE PHOTO FROM MONKMEY

Two dozen experts have written crisp, readable chapters on work planning and scheduling, safety, merit rating, labor legislation, and other topics of immediate interest to foremen.

#### The Outside Story

GLOSSARY OF PACKAGING TERMS, compiled and published by Packaging Institute, Inc., 342 Madison Avenue, New York 17, N.Y., 325 pages, \$6.75.

To improve standardization in this very variegated field, a trade association, the Packaging Institute has brought together thousands of terms along with their clear concise definitions. This is a new enlarged edition of a glossary which was sold out soon after its first appearance in 1948.



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# How to Save Heat, Speed Production, Perk Up Sales

#### Aerosol sprays: Packed with profit

The manufacturer who wants to speed production and testing. . . .

The distributor who wants products to look their best when they meet his customers. . . .

The lady who hates to part with her fur coat during the Winter, even for the few days necessary to have it cleaned. . . .

All have one thing in common: They're solving their problems with push-button aerosol sprays.

Starting from the now-famous "bug bomb," aerosol packaging has branched out into a vast array of products from dye-penetrants to drugs; with production running close to 200 million units a year, and new items being added like

Among the newest aerosols are the dry powder sprays, one of which is a fire extinguisher that uses bicarbonate of soda as the fire-damping agent.

New aerosol products of the

"standard" liquid type include several container kits. Crown Industrial Products, for instance, is offering a four-can utility pack containing lubricating oils, rust inhibitor, and clear lacquer.

New consumer aerosols include a glass frosting that "makes any clear pane look like commercially ground glass;" a new line of insecticides by S. C. Johnson; and, of course, a stream of cosmetic, drug, and touch-up products, including the fur cleaner.

New aerosol containers—particularly plastics—should extend the list of products still further.

Among the first of these to reach the market is a compressionmolded melamine container, being used by Angelique for its cologne. Angelique feels that cost is not out of line with that of a glass container-and-spray-bulb combination; and says there is little or no loss of liquid or fragrance by diffusion through the container walls.

Nylon and polyethylene aerosol containers may be next, and a phenolic is being tested.

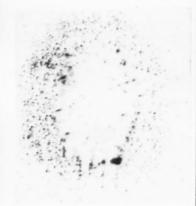
When should you consider aerosols? Morris J. Root, technical director of G. Barr & Co., points out that aerosol spraying makes it possible to:

- 1. Cover a wide area rapidly.
- 2. Suspend particles in air.
- 3. Provide instant, effortless foaming.
- Apply a compound without coming into physical contact with it.

Not that a product can simply be placed in a can with a propellent and become a useful aerosol. Far from it, Many factors must be considered (see photographs below).

Fortunately, information on these problems and their solution is obtainable from a number of sources. The Chemical Specialties Manufacturers Association has a great deal of data on aerosols, including an excellent packaging manual. Contract packagers like Barr, and suppliers of propellents (soon to include Pennsalt, as well as Du Pont and General Chemical) and of aerosol containers and valves also stand ready to help.

Continued on page 66



This deposit would change from wet to dry if button orifice were only two-thousandths of an inch smaller, or formula slightly altered.



#### End Needless Towel Expense —Save Washroom Maintenance

Yes, here's an automatic new money-making machine for washrooms. The Sani-Dri high-speed hand dryer pays you dollars 24 hours a day in savings on towels and maintenance. Ends towel cabinets . . . waste containers . . . mess and litter. Only Sani-Dri has nine special money-making features . . . Guaranteed!

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Illustrated brochure shows all models. Write today.

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36125 Commonwealth Ave.
NORTH CHICAGO, ILLINOIS



BANKERS BOX CO., Dept. DR1 720 S. Dearborn St., Chicago 5, Illinois



Effective spraying is more than just a matter of pressing a button. With spray-pattern studies like the one pictured here, G. Barr & Company shows how delivery rate, particle size distribution, spray angle, influence the nature of the aerosol deposit. Here, valve type and orifice size are being tested.



#### FIGURES FASTER THAN YOU THINK

A new machine is showing up in offices. Judging from how it's going, the Comptograph 202 may soon outsell, the way it's outperforming, other machines. It has many excellent features, and certain exclusives that have caused a stir.

For easy operation, the 10 keys and controls are arranged in the space a hand can span without stretching or tiring. It's fast—operators taken off other machines say they 'feel' the sensation of its cosmic speed (202 printings a minute). It adds, subtracts, multiplies, even divides—with the true credit balance always showing. It performs all this with remarkable ease, with faultless accuracy and with noise-

#### COMPTOGRAPH'

less rhythm that's a triumph over calculator clackety-clack.

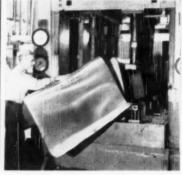
Summing up, Comptograph has more time-saving, work-saving features than any other 10-key machine. If you would like a demonstration on your work, look up the Comptometer-Comptograph representative in the Yellow Pages or send the coupon.

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#### NEW METHODS



CONTROLLED-ATMOSPHERE, elevator-type electric furnaces help Allis-Chalmers produce top-grade transformer core steel at Pittsburgh Works. Company now has own gasenerating plant to serve this installation, produces hydrogen by electrolytic distillation of water.



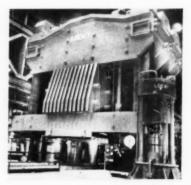
BIGGEST DIE FORGING PRESS goes into operation at Wyman-Gordon, delivers 50,000 tons of pressure to squeeze out giant aircraft sections. Built for Air Force Heavy Press Program, press turns out sections for Lockheed Super-Constellation, will soon be working on jet transports.



MODIFIED LIFT TRUCK rolls over rough roads at Inland Steel. It's a Buda 6,000-pound Diesel, redesigned to provide added ground clearance, greater resistance to shock. Modifications resulted from co-operative effort by Inland, Buda, and Lift Truck Service Co. of Chicago.



PLASTIC DIE for HPM triple-action press helps Convair turn out sharply curved aircraft fin sections at the rate of fifteen an hour. Only two drawing operations are required. Sheet is 0.032 inch 24SO aluminum. Steel jaws, attached to head of press, prevent material slippage.



LARGEST SURFACE GRINDER is installed in Carborundum plant. It's an 80-ton abrasive belt unit which, like the Loewy press above, will work on aircraft sections. Carborundum thinks it can serve industry, too, will welcome samples (up to 86 inches wide), for fabrication tests.

and

#### AND MATERIALS

PLASTIC PIPE is welcomed into the fold of regular construction materials as established mill suppliers take over its distribution. The rigid polyvinyl chloride (PVC) pipe shown here is marketed by J. T. Ryerson & Son, which also stocks laminated plastics for industrial use.



THUMB-SIZED plastic caps cover grease fittings, keep dust and dirt away from bearings and bushings. The caps, molded by YBF Corporation of Bakelite polyethylene, can be supplied in several colors to signal maintenance periods or differentiate various lubrication lines.

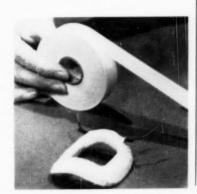
GREATER STAMINA can be built into organic insulating materials with new additive that prevents formation of carbon tracks during electrical arcing, General Electric reports. GE says additive permits use of molded butyl transformers like this in high voltage field.



Com

FLOURINE PLASTIC bellows resist heat and chemicals. These are made of Resistoflex Corporation's Flouroflex-T1001. Company also produces pipe elbows, flexible hose assemblies, and other engineered parts for industrial and aircraft applications involving acids, steam, jet fuels.

BONDED POLYESTER fibers form new wrapping tape for electrical use. Known as *Scotch* brand polyester web, the non-woven tape is said to have unusual moisture resistance, good varnish pickup, excellent conformability. Minnesota Mining & Mfg. Company makes it.



Continued on page 68



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New free booklet is packed with valuable tips for boss and secretary; shows how this \$240 copier pays for itself—often in less than a month.

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#### forgings withstand repeated shock safely

With a crack the iron sends the ball winging toward the pin at an initial speed up to 250 ft. per second (170 MPH!), and often kicks some pebbles along with the ball, too. That's shock, rough treatment for metal. But a forged golf club head lasts a lifetime. The dense metal is free from internal weakness because it is closed-die forged.

This lesson from the golf club applies to parts for every kind of machine, tool, and equipment. You can trust forged metal. It increases safety. Because the metal is internally sound as you machine into it, it cuts costs for machining, inspection, and rejections. It is uniform to withstand shock and fatigue. Take full advantage of forgings to improve your product, to cut your costs. Send for the booklets described below, and call in a Forging Engineer, to learn what forgings offer you.

# closed-die forgings for metal you can trust

DROP FORGING ASSOCIATION 419 S. Walnut Street Lansing 33, Michigan

Attach this advertisement signature to your letterhead and mail to Drop Forging Association to receive book let "What is a Forging?" or "Management Guide to Use of Forgings" Cock title or titles desired.



Symbolic emblem of the Deep Forging Association

#### Six ways to save heat

Good insulation, carefully installed and well protected, is the key to fuel conservation in any plant. This new Ohio Valley Electric Kyger Creek station shows what can be done. Built to supply a new atomic energy plant, the station is unique in many ways, but its insulation methods can be adapted for many types of service.

The photographs here show how insulation is designed to meet specific needs. Both Fiberglas and Kaylo are products of Owens-Corning Fiberglas Corporation, Toledo, Ohio. Ohio Valley Electric was formed by fifteen electric utility companies; is headed by Philip Sporn of American Gas and Electric, which will operate this station.



Expanded metal lath is facing for Kaylo insulation on boiler walls.



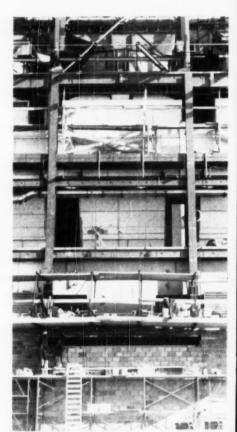
Aluminum jackets are provided for Kaylo-covered boiler hanger rods.



Removable canvas cover is fitted over head of high-pressure heater.



Elastic fibered coating is sprayed over special insulation on breeching.



Hot gas flues at Kyger Creek station are covered with Kaylo block insulation, protected by wire mesh.



Mineral wool cement protects Kayla insulation on recirculating ducts.



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## one-half million spins under tension and **OILITE** bearings show no appreciable wear

Here's a fishing reel that is subjected to laboratory tests far more drastic than it receives from anglers—and the self-lubricating OILITE bearings take it in stride. Here's what the spinning reel manufacturer reports: "Last summer we had one stock reel tested under tension (up to and including four pounds) at varying speeds. This reel had your bearings, of course.

"Our original intention was to give the reel a break-down test. However, after running the reel under tension 186,727 revolutions of the crank handle, actually revolving the head over half a million times, we found that the bearings showed no appreciable wear. In fact, your bearings appeared only slightly worn in. This is a terrific recommendation, in our opinion, for your bearings."

The impregnated oil in self-lubricating OILITE bearings is held in storage by capillary attraction and provides a surface film for positive, constant lubrication. OILITE bearings are particularly successful in trouble areas where it is difficult or impossible to provide lubrication. The built-in oil cushion absorbs heavy shocks and stresses.

Chrysler engineered OILITE bearings are made of various metals and alloys in a wide range of sizes for a multitude of uses. Standard bearings and bearing material (cored, bar and plate stock) are available from local dealers throughout the U.S. and Canada.

Contact Amplex for help with your bearing problems. The engineering facilities of Chrysler-Amplex are available to serve you. OILITE Field Engineers, Supply Depots and Dealers in all principal cities. Overseas distribution through Chrysler Export.

Chrysler-Amplex also manufactures Permanent Metal Filters, Finished Machine Parts and Friction Units.

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#### BUILDING TO-MORROW'S MANAGEMENT

Continued from page 41

available in advance an outline of the subject, one or two case studies, key questions, and recommended readings.

In the course of the 1954-1955 program, lecturers and moderators included the following: an expert in the field of communication; an industrial psychologist; a personnel director of a very large organization; a senior partner of one of the nation's leading management consultants; the publisher of a leading journal in the field of personnel management; and, the Chairman of the Board of Directors of the organization, himself an educator of considerable note. Forty individuals were participants in this senior program-from the Operations Supervisors up to the Executive Vice-President of the organization. Top management support was assured from the very beginning.

By the combination of actual case studies, presentations by experts, and group discussions at the evening dinner sessions, the following "full treatment" subjects of management interest constituted the program for 1954-1955:

KEEPING ABREAST OF MOD-ERN MANAGEMENT

"Ethics in Management"

"Communication Patterns in Management"

"An Industrial Psychologist Looks at Business Management"

"Men, Motivation, and Morale"

"Selecting, Appraising, and Developing Personnel in Supervisory Positions"

IMPROVING YOUR EXECU-TIVE COMPETENCY

"Paths of Executive Self-Improvement"

"The Art of Decision-Making and Control"

"The Art of Delegation"

"The Art of Talking it Over: Executive Counseling"

The proceedings of these two series were subsequently printed and made available, at the close of each session, for inclusion in a looseleaf manual for each of the participants to permit continued study and consideration. These materials, which represent very definitive treatment of the subjects, were supplemented by selected materials of the American Management Asso-





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REALTY INVESTMENTS

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"Famous Financial Transactions"

ciation, the National Office Management Association, the Society for the Advancement of Management, and other sources. Among the supplementary materials included was a comprehensive account of the movement toward "automation"—a subject which holds great interest and possibilities in the management of insurance business operations.

#### Regular Evaluation

Two evaluations of the 1954-1955 program were made; the first at the mid-point and the second upon completion of the program. The responses and reactions of the men at the mid-point served as the basis for improving the pattern before the second series got under way. In these evaluations the candid views and suggestions of the participants were sought in regard to the management subjects and their treatment, as well as the general climate and setting of the program, the level of participation, the quality of printed materials available in advance, and the final materials for the manuals or notebooks. Their ideas as to the opportunity for discussion and analysis, and other key factors were sought. The final

evaluation was undertaken at the close of the program. The results are indicative of a very profitable program for the future in moving toward the objectives.

We are now engaged in several important projects which bear relationship to the whole program but which, in themselves, would have been undertaken independently in any event. First, a number of revisions of the organizational structure are being made to make it still more effective and more functional during the period of transition and further expansion, Second, to centralize its essential services and personnel to achieve better teamwork in the best interests of serving its clientele, plans are being drawn for the construction of a new building with larger quarters for the expanding organization. These two actions, while independent in their origin and need, do have a relationship to executive functioning and executive development. Third, special attention is being given to the problems of communication, especially in regard to improved communication with the corps of middle management executives, so that there will be better co-ordination as one division understands

# times faster than hand lettering!



With skilled draftsmen as scarce as they are, it's an enormous waste of time and money to assign them to a chore that can be done faster and better...yes, better...by your office typist.

She'll do a neater, sharper, more legible job on the Vari-Typer Lettering Machine... and she'll do it 4 to 5 times faster than hand lettering by your skilled draftsmen.

Easy as ABC to operate. Universal keyboard, with hundreds of instantly changeable type faces and sizes make Vari-Typer useful and economical for other jobs, too., composing printer's style text matter for reproduction by any duplicating method...in literature, specification sheets, instruction manuals, etc.

#### PRODUC-TROL Visual Control not only schedules,

automatically checks with TIME, LINE and COLOR control CONFUCIUS SAID.
"A PICTURE IS WORTH 10,000 WORDS Scheduling 8,000,000 items.

- Original cost and upkeep low
- Schedules and time checks
- Historical record to back it up.
   Analyze 100 items in 10 seconds.
- Its simplicity has put it into world-wide use.

Effective Tools for Effective Management WASSELL ORGANIZATION, INC. Westport, Conn.

# LETTERING MACHINE

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# Manuel Gal uoors

The KINNEAR Mfg. Co.

FACTORIES: 1500:20 Fields Avenue, Columbus 16, Ohio 1742 Yosemite Ave., San Francisco 24, Calif. Offices and Agents in All Principal Cities

Here is a BIG factor often overlooked by cost-minded business and industry: The floor and wall space . . . the time and labor . . . the upkeep and repair costs you can save with Kinnear Rolling Doors.

Opening straight upward, they coil out of the way. Their rugged, all-metal, heavily galvanzed construction withstands hardest use . . . toughest weather conditions. Built any size, with manual or electric operation. Ideal for old or new buildings of any type.

Write for details on Kinnear Rolling Doors-the BIG value in door efficiency.

Saving Ways in Doorways



NATHANIEL STEWART, Director of the Management Development Program for Government Employees Insurance Company, has had many years experience in the executive training field. He is currently a guest lecturer on this subject at American, Johns Hopkins, and George Washington Universities. One of his most recent special assignments was as a member of the staff in follow-up of the Hoover Commission Recommendations on "Special Personnel Prob-lems in the Department of Defense."

lems in the Department of Defense."

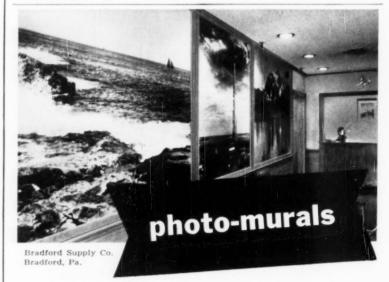
Dr. Stewart has been Director of Education for the U.S. Office of Censorship, 1942-1944, and Administration Officer for the Library of Congress, 1944-1947. He obtained his Doctorate in Education from Columbia University and is a member of the Personnel Research Committee and the Society for Personnel Administration.

and appreciates the role and function of the other. Also, plans are under way to expose more of the first and second line supervisors to the advanced training.

The company believes its best investment can be made in developing in key people in the managerial ranks a deep sense of the meaning, value, and practise of delegation, decision-making, control, communication, and human relations-in addition to their special technical competencies. A company's efforts to provide stimulation and support for an executive development program of this kind, obviously, is only the beginning. The acid test

will be not what the company can do for these potential administrators, but what they can, with the evident interest and support of top management, do for themselves through conscious and deliberate self-development and self-education in the art and science of management. Like the directors and top executives of other organizations which have undertaken such programs, the top executives have the strong belief that this investment in the development of its younger executives and managers will "pay off" as it enters the periods of transition and expansion.

THE END



are wall decorations that sell good will!

Leading companies have found Photo-Murals to be a unique and profitable way to put reception areas to work. We manufacture photomurals to your order, in black and white, sepia or full color, from your photograph or ours.

Write for information

from WEST-DEMPSTER CO. Grand Rapids, Michigan

#### TECHNICAL PROGRESS

Continued from page 37

	Nylon-collared lock nuts, alumi-
•	num studs, titanium bolts, mold-
	ed nylon clamps and rivets
	New stapling and strapping ma-

chines

#### New methods and processes

#### Metalworking

- Hot extrusion and heavy press
- Electrolytic grinding and electrodischarge machining
- Ultrasonic machining, soldering, and degassing of molten metals
- Plastic tooling "Disposable" carbide tooling

#### Chemical separations

- Synthetic fiber filters (both textile and paper types)
- Porous elements of fluorine plastics and stainless steel
- Flocculating agents
- Synthetic sodium and calcium aluminum silicate "molecular sieves"

#### Gaging and inspection

Send for FREE ILLUSTRATED

CATALOG, containing seven large

scale maps showing in color the area

covered by our 400 large scale street maps. Absolutely no obligation, no

salesman will call

Radioisotope thickness and liquid level gages

#### Ultrasonic and fluorescent parti cle flaw detectors

- Portable x-ray and fluoroscopes
- Multiple air gages

#### Packaging

- Polyester films, formed plastic sheeting, wet-strength paper
- Knock-down pallet boxes, collapsible rubber bins, bulk cardboard containers
- Automatic weighing and bagging; mechanized casing and palletizing

All of these are at least in semicommercial use to-day. Farther ahead for most plants, but still close enough to rate careful attention. are irradiation processes that sterilize foods and drugs, and promote chemical reactions; solar energy converters and new photo-chemical processing techniques; synthetically-produced "natural" rubber, mica, and diamonds; and new families of plastics.

The next year—the next ten years -will be exciting ones. Will your company be ready for them?

## FOUR WAYS TO CUT MATERIALS HANDLING COSTS

Case Histories show how to use "Lift-Portation" for truck loading, machine feeding and beavy lifting

> by Frank Breckenridge Vice-President in charge of Engineering and Manufacturing

 $oldsymbol{T}$ o maintain profits in the face of the rising costs of our expanding economy, economists forecast the need of a 3% increase in productivity per man each year. Because manufacturing consists largely of movement of materials, a study of material handling methods will indicate many clues to sources of this increased productivity.

#### MACHINE FEEDING

In Washing ton, D. C. a large printing company studied the manual stoop . . . turn .. lift . twist required to remove paper

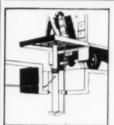


stock from a skid and place it in position. on a power-driven paper cutter.

To speed the operation, the skid is now placed on a Globe Production Lift installed alongside the paper cutter. Manual lifting is completely eliminated. The operator, by push-button control, raises the paper to cutting table level and slides a neavy load of paper under the blade with little effort. As the paper level goes down, the platform is inched upward.

Production increased approximately 30% after installation of Globe Lift.

#### TRUCK LOADING



A one-story ground level branch warehouse and service station was faced with the frequent need to load and unload fork lift trucks, weigh-

ing from 1½ to 8 tons. Without a loading platform, each operation was slow and

When a Globe Loading Lift was installed, fork lift trucks were run onto the platform at ground level, lifted and then run onto the truck.

Loading and unloading that previously took hours is now completed in minutes.

#### ELECTRO-LOADER

A mainte nance depart ment in a me dium size plant was located 3 feet below ground level. Supplies and machines moved into and



out of the department by means of a ramp. It was slow, laborious work.

By replacing the ramp with a Globe Electro-Loader, traffic was speeded and muscle power was eliminated.

The Electro-Loader is installed on the floor. No excavation was necessary. Powered by an electric motor, the platform travels between floor and ground level by

#### TRANS-O-MATIC RAMP

The shipping dock of a large paint factory in Buffalo, N. Y. was continually jammed with trucks. Often trucks waited to load and unload. While the



dock was "standard" height above road level, most truck bodies were too high or too low for hand trucks to roll smoothly

Three self-leveling Trans-O-Matic Ramps were installed so that each truck bed, high or low, was provided with an easily traversed ramp. Loading and unloading was speeded by as much as 50%. Lost time from spilled goods and breakage was eliminated. No longer do trucks wait for platform space.

## MEANDERING DELIVERIES

Route your trucks the SHORTEST WAY every trip. The time and gas used by your drivers looking for unknown streets will buy a hundred maps like Hearne's Street Map of your city and

Cut 1/3 in truck miles

Printed in six colors; street names are in big, black type, and instantly spotted with Hearne's patented, automatic Street Finder.

Over 100,000 truck owners use Hearne maps every day to give customers better service and cut truck mileage. Many users claim they save the cost of the map in a single day's use.

#### HEARNE BROTHERS

America's Largest Manufacturers of Commercial and School Maps

#### 25th Floor National Bank Bldg., Detroit 26, Mich.

- 44" by 65" wall maps of any American city, \$42.50 each F.O.B. your office. 44" by 65" wall maps of any American county, \$42.50 each F.O.B. your office. 44" by 65" wall maps of any state in the Union, \$42.50 each F.O.B. your office.

If in your operation you use salesmen, our city-county street maps might save your men considerable time. Test after test conclusively proves that this type personnel will make more calls more often if you make it convenient. Our city-county street maps locate instantly and mechanically for your salesmen, any street address in any American city. We will promptly mail one of your secretaries a brochure.



Crry	Zosa	STATE
ADDRESS.		
COMPANY		
NAME		
	copy of Time-Savi lobe Lift-Portation	ing, Cost-Cutting Case
East Mermaid La Philadelphia 18, I	ne at Queen Street enna.	
GLOBE HOIST	COMPANY	DR-736-CH



## New Shoes!

## Americans are the best-shod people in the world. Read how banks help.

About six months ago the "Mary Janes" above were the flanks of a Hereford calf.
To ready them for a party took the combined resources of tanners, manufacturers, retailers and a whole squad of bankers.

#### What banks do

Before it's fitted snugly to your foot, a shoe is well-heeled with bank loans. The reason why goes briefly like this. The tremendous ingenuity developed by American shoe manufacturers is largely channeled into making an almost unlimited selection of rugged, inexpensive shoes. This requires mass production. Mass production requires ready money, and bank loans are one good way to meet that requirement.

Bank loans help tanners buy up hides and process them. Bank loans, in turn, help shoe manufacturers stockpile great quantities and varieties of leather. They frequently free working capital for factory expansion and experimentation with new types of footwear. In the retail area, bank loans often help finance shoe store construction. Finally they help your dealer stock a shoe style and a size for practically every man, woman and child.

#### Working money

As you can see, bank help to the shoe industry means better fitting, more sturdy shoes for you. But it means more than that.

Bank help to the shoe business, or any other successful home-grown enterprise, means that competitive banking has put the community's idle funds to work. It follows that money at work means jobs for men and women, profits for investors and enterprising manufacturers... and a high standard of living for Americans. The Chase Manhattan Bank of New York, a leader in loans to American industry, is proud of the contribution banking has made and is making to the progress of our country.

## CHASE MANHATTAN BANK

(MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION)

(One of a series of advertisements being published in New York City newspapers)

and



New Kaye headquarters is three-block-long modern building with 140,000 square feet of floor space.

### NEW LOOK FOR DISTRIBUTORS

It unites warehouse, showroom, training, and other services under one roof.

> PHOTO VISIT



Simple front entrance shows twin reception areas where visitors are directed to desired sections.

DISTRIBUTORS in traffic-jammed urban areas may find the answers to many of their problems by looking at a step recently taken by Gerald O. Kaye and Associates Corporation. Kaye, distributors in the Metropolitan New York area for Avco Manufacturing Corporation's Crosley and Bendix Home Appliance Division products, decided they needed to get away from congested Manhattan and unify their functions under one roof. Finding a centrally-located site only six minutes away in Maspeth, they built a new two-story home, are now able to provide more efficient and better service.

Designed to be as self-sufficient as possible, the building in Maspeth includes in its facilities: 100,000 square feet of warehouse space; truck and train shipping and receiving docks; a modern showroom; cafeteria; sales and training areas. In addition to providing training and parts services for dealers, Kaye plans to make many of the facilities available to them for meetings and the like. Too, a dealer may bring customers into the showroom and let them see items which the dealer himself may not have in stock.—John Drekler.

More pictures on following pages.



Well-lighted showroom can be divided by drapes into twelve sections, has 62 adjustable spotlights, prefabricated stage.



## MARSHIAN TAPER LICKS HERSHEY CHOCOLATE SHIPPING PROBLEM

Hershey Chocolate Company's packaging operations have been speeded up with Marsh Electric gummed tape dispensing machines. They're called "DIAL-TAPERS" because you just dial the tape length needed. Tape is measured accurately, moistened with warm water, and cut off clean, ready to seal with one pass of the hands. Users save up to 25% in tape . . . 50% in time with the Marsh Electric DIAL-TAPER. It's amazing.

FREE: "The Marshian Story" of Electric Taping, Clip ad to business letterhead with your name. Mail Taday! MARSH STENGIL MACHINE COMPANY, 62 Marsh Building, Beleville, Illinois U. S. A., et al.

## MARSH DIAL TAPER



27 Speed Sweep styles and sizes to meet every sweeping need. Write for prices today.

MILWAUKEE DUSTLESS BRUSH CO. 530 N. 22nd St., Milwaukee 3, Wis.



Peg-board displays of parts eliminate confusion at counters. Phone is available for dealer's representative to call home base on any question.



Sales and service training rooms are for use by both Kaye and the dealers it serves so that they may keep up-to-date on new products and methods.



World's Largest Builders of small 2-cycle industrial engines Up-to-the-minute records of all service contacts are kept in the order department, where calls come in and schedules for service calls are made.



all da Vinci needed was a lightweight engine

Are there some practical products in your engineering department that need only the spark of a new modern power unit to develop?

Power Products 2-cycle engines have already resulted in dramatic developments in power lawn mowers, chain saws, grain augers and many other fields.

... Do a little "Imagineering" in terms of your products -

POWER PRODUCTS engineers are available to consult with you in confidence on specialized engineering for mass production application.

CORPORATION

Continued



Statistical control center is equipped with IBM machines, provides sales, inventory, other reports. All employees here are trained at IBM schools



Part of the 100,000 square feet devoted to warehouse space. In center, crates have just been unloaded from freight car, will be stacked later.



Warehouse, designed specifically for appliance storage, has temperature and humidity control through blower system, ceiling and wall insulation. More pictures on following page.

## Almost 7-Ft. long . . . yet it TIERS IN 6-FT. AISLES!



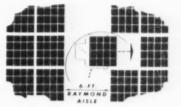
#### IT'S MAGIC the way this RAYMOND Truck tiers in aisles narrower than its own length with load!

Yet, day after day this truck does just that in hundreds of plants and warehouses.

#### HERE'S THE SECRET . . .

The RAYMOND Truck is extremely compact, has a patented off-set drive wheel with 200° turning arc. This permits it to right-angle stack from 6-ft, wide aisles . . . gives you up to 50% more storage.

Its light weight allows safe operation on low-capacity elevators and floors. 51" free lift enables it to tier in lowceiling areas without increasing over-all height.



NEW LEASE-PURCHASE PLANS! Now it's easy for you to own or lease any RAYMOND Electric Truck. Three new plans permit you to rent or purchase over I to 3-year periods. Ask your RAYMOND representative about these plans!

#### SEND FOR BULLETIN

#### RAYMOND

**Electric Industrial Trucks** Hydraulic Elevating Equipment

#### The RAYMOND CORPORATION

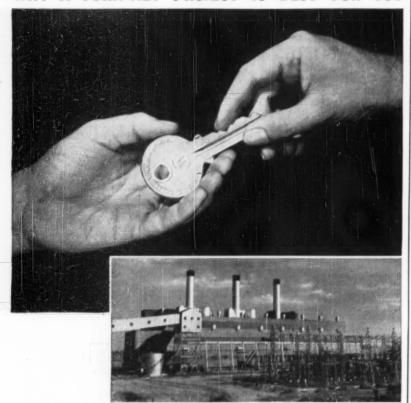
4677 Madison St., Greene, N.Y.

Please send Bulletins on 2,000 and 3,000 lb Tiering Trucks.

Please	have	your	repre	sental	live	call.	

COMPANY

### WHY A TURN-KEY PROJECT IS BEST FOR YOU



A Turn-Key project is a "packaged" service that combines engineering and construction in a single contract . . . and that may include other services such as preliminary investigations, studies and site selection, procurement of materials and equipment, initial operation of the finished plant.

#### Advantages to you:

LESS COST: Who is better qualified to construct a project than the firm that designs it? In a Turn-Key project one organization performs both engineering and construction services; details are handled quickly, efficiently—therefore more economically.

LESS\_TIME: Excavation can be made and foundations started several months prior to the release of the Engineer's completed design drawings and specifications. Construction follows blue prints—promptly. This scheduling of design and procurement to meet construction requirements permits the project to advance in an unbroken sequence—setting the stage for a faster delivery of the completed plant.

MORE SERVICE: One contract gives you complete service—no question about responsibility. Thus you have better control and more closely integrated planning.

We offer you engineering and construction services separately but suggest you consider combining them into a Turn-Key project that will save you both time and money. Write today for this free booklet describing the advantages in detail.



POWER . AVIATION . PETROLEUM . TEXTILES . INDUSTRY



engineers · constructors

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BRANCH OFFICES THROUGHOUT THE WORLD

#### PHOTO VISIT

Continued



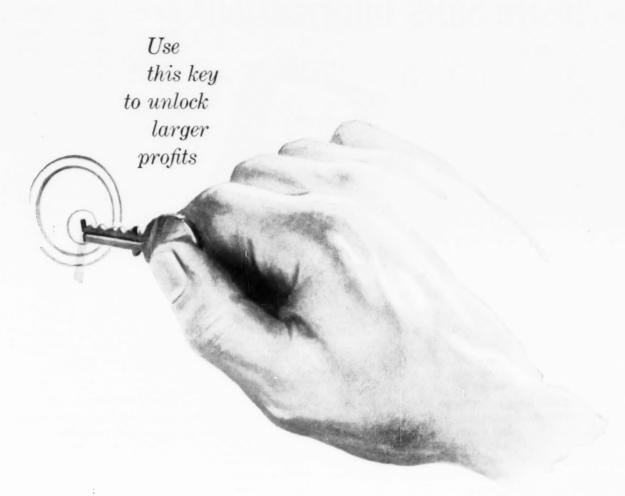
Outgoing merchandise is handled in any weather at enclosed truck dock. Remote controls operate doors. Twelve trucks at a time may be brought in.



Railroad siding at rear of building can accommodate eleven cars. Crew places cars at exact openings near areas where products are to be stored.



Parking lot, with gas pumps, is for use of visitors and employees—another of the features provided to make distribution and service easy and pleasant.



Success in management today means improved methods of communication. Royal McBee machines, methods and systems should be high on the list of implements which *activate* your facts and figures.

How? Perhaps with the excellence of every "Royal" typed letter leaving your office. Or possibly with the custom-designed and timely McBee operating report which reaches your desk in time to capitalize on opportunity, or rectify a fault.

Either or both—American businessmen are finding that Royal McBee machines and methods are unlocking larger profits ... helping to curtail costs.

	1955		1954
\$2	22,782,404	\$17	7,362,971
\$	3,132,697*	\$	654,820
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2 Park Avenue, New York 16, N. Y.

## **Exclusive Sales Information**

For Men
Who Have to
Build Sales



54	12	Askin Alton H Gr 1	J 316
72	22	Atwell Roy D RugCla	E 216
54	12	Atwood May (Mrs Charles) Cr	E 2
50	42	Robert Com ! Comments of the c	E a
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75	38	Clinton James . Atrp 0	K 31/2
58	12	Clough Arthur & Ann Rst	G 31/2
59	62	Cody Edward F HayGrn 6	2
73	99	Colfax Interior Decorator	_
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26	02	Dawes Howard H Agimpt 5	
12	38	Day Oscar Atrp /	H 372
07	23	Decatur Joe NR PityHtchy	2
28	93	Delta Co Comts	1×
42	12	Dobson Henry Trkg 3	F 31/2
72	21	Drake Milton R ClgDvg 6	3
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52	11	Floar Charles C   Lhr	D+ 2
17	31	Emercon Charles Fie Q	I 31/
17	61	Bradley & Jones Browder's Stores (See Centerville) Burton L B & Bro R1 Butler Archie Jr Button Robert Cardman Charles Caldwelf Frank Cameron H D & Son Carlton House Carter's Carrer George D Chester & Mears Chids George W R3 Clifton William E Clinton James Clough Arthur & Ann Cody Edward F Colfax Interior Decorator Collins Paul J Inc Congreve Herbert R1 Dawis Charles Day Oscar Decatur Joe NR Delta Co Dawes Howard H Dawis Charles Day Oscar Decatur Joe NR Delta Co Company Hither Company Hither Company Hither Congreve Herbert Day Oscar Decatur Joe NR Delta Co Company Company Decatur Joe NR Delta Co Company Desar Charles Day Oscar Decatur Joe NR Delta Co Company Desar Charles Day Oscar Decatur Joe NR Delta Co Company Desar Charles Day Oscar Desar Charles Day Oscar Desar Charles De	E 21/
17	10	Evans Frank Co . Roong	E 3.72
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Now you can help your salesmen find prospects faster...concentrate where it counts most...get the jump on new business with the latest editions of Dun & Bradstreet's STATE GUIDES.

Give a salesman a list of his prime prospects, arm him with up-to-date facts about these customers' purchasing power, furnish him vital information on which to plan his approach, and you have the formula for *more* and *larger* sales.

That's exactly the kind of pin-pointed help you'll find packed into each of Dun & Bradstreet's latest pocket-size STATE GUIDES. City by city, town by town, these valuable books list the retailers, wholesalers, manufacturers in which you're interested. Not just the ones in downtown sections, but also those on the outskirts, in the suburbs and on the highways.

#### EASIER TO PLAN SALES STRATEGY

If he will invest a few minutes in pre-call planning, any salesman can select the prospects and arrange his entire day's calls to concentrate where the profit potential is greatest. Easy-to-understand codes tell him the *type* of merchandise handled, the number of years in business, the financial strength and credit rating.

STATE GUIDES are actually the 3,500-page Dun & Bradstreet Reference Book published in handy 5" x 7" size for each state. That is why they are available *only to Dun & Bradstreet subscribers*—and why they can give your salesmen such a big edge over your competitors.

#### MORE TIME FOR ACTUAL SELLING

Because salesmen can plan *ahead*, there is less back-tracking, less wasted motion in prospecting, fewer hit-or-miss calls. They

know where they're going. They know what kind of business to expect and how large an order to ask for. And because they can make *more* calls each day on the *right* prospects, they can spend more time actually *selling*, produce more business.

## New Editions Reflect 800,000 Changes Make sure your salesmen know the many NEW businesses and NEW ratings in their territories!

Business changes occur at the rate of *more than 5,550 a day!* New concerns are opened. Others change ownership. And thousands have changes in capital and credit ratings, favorable and unfavorable.

With the help of the latest STATE GUIDES your salesmen can keep up with these changes, know when to seek larger orders. They can instantly spot *new* businesses, get the jump on competitors, open new accounts. Don't handicap your sales force with outdated information—when it's so easy to give them the latest facts with these new STATE GUIDES.

## Here's how to get these valuable guides to your salesmen in time for next week's calls!

All you need do is telephone the Dun & Bradstreet office nearest to you. Subscribers to Dun & Bradstreet credit information service are entitled to these STATE GUIDES at surprisingly low cost. You can have *all* or *any* of the various states—as many copies of each as you want.

### Dun & Bradstreet, Inc.

OFFICES IN PRINCIPAL CITIES OF THE UNITED STATES

### ORGANIZING PLANT DISCIPLINE

Clear rules, graded penalties, properly communicated, evenly enforced, stress prevention over punishment. Here's a guide.

Half the labor arbitrators in America, and a goodly portion of the labor-versed lawyers, might well starve to death or be driven into other professions if it were not for the unending stream of employee grievances over disciplinary actions.

Sometimes there are no clearly stated rules and regulations in a plant. Sometimes a code of discipline has simply grown up by accretion of new rules without any uniting principle or matching of punishment with the gravity of the offense. Sometimes application is lax to-day and tough to-morrow.

Management of a plant that has no systematic set of disciplinary rules, or that has not reviewed existing rules and practises in recent years, will find a good guide in a set of principles drawn up for manufacturing superintendents of Moore Business Forms, Inc., Niagara Falls, N. Y., by Edmund Johnstone, industrial relations manager.

Business discipline, Johnstone says, can take account of such fac-

- 1. Long and satisfactory service. 2. Family conditions and current
- personal problems.
- 3. Management laxity in condoning similar offenses in the past.
- 4. Lack of clear understanding of the rules, perhaps due to poor explanation or communications.
- 5. Dissatisfaction within a department arising out of attitudes and conditions known to management but not heeded.

As guiding principles for administration of a code, he suggests:

- 1. The main purpose of the code is protection of the group and not punishment of the individual.
- 2. The object of punishment is, first, to encourage others not to

commit the same offense and, sec-

- fractions (not necessarily involving punishment) is the most effective
- 4. It is essential to establish all
- 5. Calm appraisal of the facts is necessary before passing judgment.
- 6. Vindictiveness has no place in
- person merit increasing penalties.
- 8. The offender has the right to know the charges against him and to face the complainant, and he must be given every opportunity to state his own case (with advice and assistance if he so desires).

ond, to serve as a salutary lesson for the offender.

- 3. Prompt attention to minor inway of avoiding major ones.
- pertinent facts.

- 7. Repeated offenses by the same
- 9. The offender has the right to appeal.
  - 10. Incompetence, physical or



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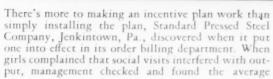
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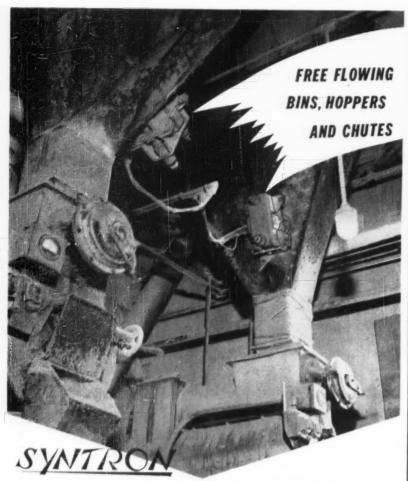






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mental incapacity are not matters for disciplinary action but should be handled as training problems or as causes for severance with reasonable notice.

11. It is essential that no penalty be imposed in the heat of the moment.

Johnstone offers seven requirements for a satisfactory code:

- 1. Rules should be few and easily understood.
- 2. No rule should be included which it is not intended to enforce.
- 3. Rules must be such that they can be administered effectively.
- 4. There must be adequate training in the code.
- 5. Infractions of rules must be visited with penalties commensurate with the seriousness of the offense.
- 6. There should be a reasonably uniform practise for investigations and making of decisions.
- 7. Rules should not infringe upon the basic rights of the individual and should be consistent with accepted codes of behavior.

Offenses may be classified in three categories, according to Johnstone's guide: Class A—violence, actual or threatened; refusal to carry out legitimate orders, immorality on company property or time, wilful disregard of safety rules endangering the lives of others, habitual addiction to intoxicants to the detriment of efficiency.

Class B-gross neglect in per-

formance of duty, dishonesty, disorderly conduct, gambling on company property or time (other than such minor matters as small departmental pools on the World Series, and so forth), wilful damage of company property.

Class C—Isolated instances of intoxication, smoking in unauthorized places, irregular or continually tardy attendance without just cause, idling or causing others to idle, carelessness in handling company property, thoughtless lack of compliance with safety rules, horseplay.

For Class A offenses, he recommends, instant discharge is appropriate in clear-cut cases, or immediate suspension if there appear to be mitigating circumstances. A layoff up to three months may be applied if investigation makes discharge seem too harsh a penalty.

Class B offenses, he says, are not matters for instant discharge, although discharge may prove proper after investigation. After preliminary consultation, suspension pending full investigation is proper. In cases not meriting discharge, he suggests layoff up to one month.

For Class C offenses, if the offender is creating a hazard, the foreman should send him home, preferably in agreement with his union representative. Otherwise the case may be handled routinely, with penalties ranging from written reprimand to a week's layoff.

ALFRED G. LARKE

#### Traveling billboard on in-plant trucks

Lifting an idea from public buses and trolleys, Goodyear Aircraft Corporation put "car-cards" on more than 30 materials handling trucks. Quality control and material conservation are the subjects of the car-card slogans; employees are invited to suggest new ones.



#### THE MEANING OF CONTROL

Continued from page 46

devices of management in that light. Perhaps 'standards' is not the very best word. Yet these elements of the system are standards in a very real sense, for they have been laid down by competent authority as models or standards of desired performance.

These standards are, of course, dynamic in character, for they are constantly altered, modified, or revised. But for a moment let us give our attention to their static quality.

An objective is static until revised; a plan or program is static until it is abandoned. They possess a kind of temporary durability or limited permanence. They are in force until superseded. This same static quality inheres also in the other elements of the managerial system we spoke of. Policies, organizational set-up, procedures, delegations, job descriptions, and so forth, are, of course, constantly altered and added to. But, like objectives and plans, they retain their force until they are either abandoned or revised.

Suppose, for convenience, we use the phrase 'framework of management' to mean all the elements of the managerial system taken together-objectives, plans and programs, policies, organization, and the like. Doubtless, a more descriptive phrase could be invented, but this one at least suggests the notion that there is something of a semipermanent nature in the managerial system. Now we can in a new way identify what is controlled. Managers control adherence to the objectives, plans, policies, organizational structure, procedures, and so forth, which have been laid down. In brief, managers control adherence to a predetermined 'framework of management.'

Now we can turn to the very important question that must be answered: "Who should act?"

It has become almost axiomatic as a management principle (which is unfortunately not always given effect in practise) that that person should act who is responsible for the results. 'Results' has to be interpreted here in a broad sense. For results include not only profits and costs—obvious items—but the conformity of all operations with all standards. Hence, whoever had re-

sponsibility for specifying and establishing a particular standard has to be ultimately responsible for controlling adherence to it and responsible, therefore, for such corrective action as is necessary. Of course, those below him in the chain of command may help him, but they cannot relieve him of final responsibility for control. Therefore, authority for managers to establish standards should be delegated as far down in the organization as practical wisdom permits. It then becomes their responsibility to control adherence of operations to the system they establish.

It is not only a responsibility, but a right; and it is asking for trouble to place in anyone else's hands the responsibility for controlling results in the operating manager's sphere of responsibility.

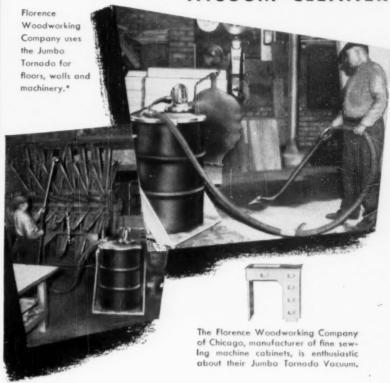
If the basis of control is information in the hands of managers, 'reporting' is elevated to a level of very considerable importance. Used here in a broad sense, 'reporting' includes special reports and routine reports; written, oral, and graphic reports; staff meetings, conferences, television screens, and any other means whereby information is transmitted to a manager as a basis for control action. Even the non-receipt of information, as where management is by exception, can be informational and imply the existence of control.

We are often told that reports should be timely and designed to meet the needs of managers. We are in a better position to appreciate this when we realize the important role that reporting plays in the control function. Certainly if it is to be the basis for control, information should be assembled with that objective in view. It should exclude material extraneous to the problem of control and must be placed at the disposal of managers quickly so that operations do not deviate any further from the desired norm-or for a longer period-than can be

That control occurs after the fact is a point that sometimes troubles managers. It should not—since this is simply part of the nature of the concept. The situation is entirely comparable in the process control system described earlier. In that

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system the detecting device continuously evaluates results and transmits them back to the control mechanism, which, sensing the difference between the actual and the desired results, acts to restore results to the desired value. The results, just as in management control, precede the exercise of control. Control systems, human or mechanical, deal with transfers of energy and a transfer of energy takes time. We learn from this-and it underscores the importance of speed in reporting-that all we can do for the management problem is to minimize the time lag between results and action.

#### Control Spectrum

There is another sometimes troublesome aspect of control, namely, that control over some things must be relinquished as successively higher echelons of management are reached. This again we must simply face. Managers in the first echelon require certain information as their basis for controlling. But in the next higher echelon, the character of required information changes; some information is dropped, some is added. There is thus a kind of 'control spectrum.' For the process of fading out and shading in of information is continued as you move up the pyramid until, just as in the visible spectrum the colors at one end are wholly unlike those at the other, the information reported to the top is wholly different from the information reported to first line managers.

This would hardly be worth pointing out except that some managers are burdened with a persistent sense of insecurity which undermines their self-confidence and ability to do the job, because they are unable to keep track of all the details under their management. Of course, they should not be able to keep track of all the results, or more accurately, should not allow themselves to do so, Relinquishing control over some operations is a calculated risk, taken so that managers can assume more important tasks.

It will bear mentioning that information serves other purposes than as the basis for control. The notion of a 'framework of management,' which we suggested earlier, is helpful in describing one of these

purposes. This 'framework,' we said, is constantly undergoing change in one or another of its aspects. Such change takes place, not accidentally, but following conscious decisions for change by those responsible for such decisions. And decisions for changes in the framework are based on information that is conceptually different from information used for controlling adherence to the framework.

#### Where Forecasts Fit

Forecasts and projections, for example, have no place in the problem of control (since control is after-the-fact while forecasts are before) but they are very important for setting objectives and formulating plans. Of course, information for aiming and for planning does not have to be before-the-fact. It may be an after-the-fact analysis proving that a certain policy has been impolitic in its effect on the relations of the company with customer, employee, or stockholder; or that a certain plan is no longer practical; or that a certain procedure is unworkable. The prescription here certainly would not be 'control' (since in these cases control would simply bring operations into conformity with obsolete standards), but the establishment of new standards-a new policy, a new plan, and a new procedure-to be controlled to.

Besides furnishing evidence of a need for reconstructing the managerial framework, information is, of course, the basis of all communication. But since that subject is one of the most discussed in the management field to-day, there is no need to discuss it further here.

Control, we have seen, means something quite specific in the managerial art. This is certainly as it should be in an area of thought as well developed as business management. For in any field for which theory has been developed to an appreciable extent, terms should be precise and unambiguous. Control, when used in a management context, should mean one thing and one thing only. I have suggested that it means action directed toward bringing operations into conformity with predetermined standards and goals; that it is exercised by managers; and that its basis is information in their hands afterthe-fact.

In addition to being a specific part of managing, control is also, quite evidently, an extremely important part of managing. In organizations, therefore, where the responsibility for control is not placed in the hands of managers, or not accepted by them, difficulties are certain to arise. Managers must control. Staff members of the organization may, by furnishing information, help a manager discharge this responsibility, but may not share in it. Where this philosophy is adopted by top management as the policy of the organization, the probability is enhanced that the energies of the organization will be channeled in fruitful directions.

#### Terminology

Control is admittedly a term with emotional connotations. The denotation of the term, however, suffers from no such objection. Control is not supervision. Experienced managers perceive that as their authority is broadened, their superiors must place increased reliance on control as a means of safeguarding their own accountability. But at the same time, supervision of their activities by superiors become less close. There seems every reason to believe, therefore, that as the real nature of control becomes better understood, managers will come to recognize that their being subject to it in increasing measure is as sure a sign as any of their progress in the organization and in the fulfillment of their position.

THE END \*\*\*\*\*



The AUTHOR

and

Douglas S. Sherwin is a graduate of Pennsylvania State University and also holds de-grees from Oxford University in England. He has recently been on loan to the Federal Facilities Corporation, Washington, D.C. Secretary, developing systems and procedure for that organization. He has had other experience with the Government from terms with the Reconstruction Finance Corpora-tion and the Office of High Commissioner

A chemical engineer by profession, he has written several articles and is a member of the American Chemical Society, the American Institute of Chemical Engineers, and the American Economic Association.



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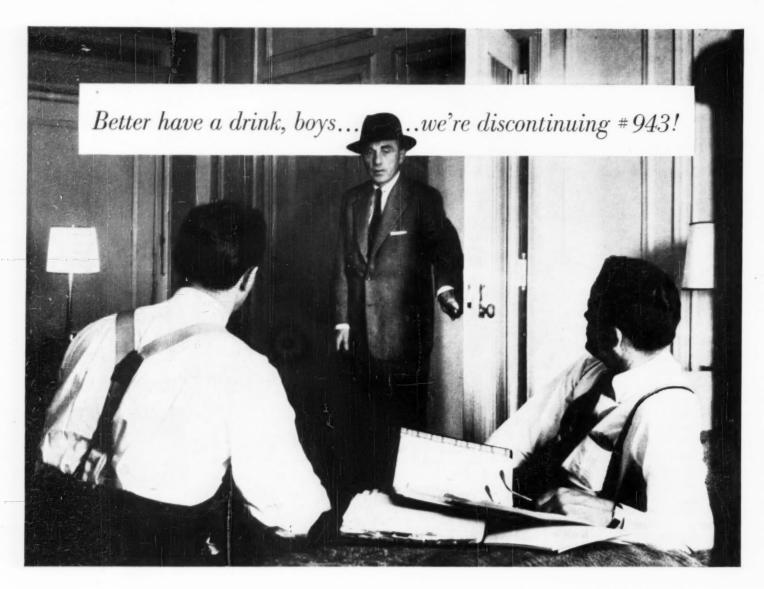
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Marketing notes and comments

#### . J. K. BLAKE

### WHO'S LOOKING AFTER THE STORE?

If your products sell at retail, there's one big market you may be neglecting. And it may be costing you sales . . . .

 $oldsymbol{I}_{ extsf{F}}$  your products are sold at retail, the odds are that you are passing up a key buying influence. Most manufacturers concentrate their selling effort on the distributors or dealers and on the consumers. The sales clerk is left

Is he a significant sales influence?

A big one, thinks R. E. Taylor, v-p of Tradeways, Inc., a New York marketing consultant who calls this the neglected third market. Most customers, says Taylor, don't specify a brand name when they go up to the counter. They say, "I'm interested in a TV set (-or a watch-or some sterling silver)." Those customers who think they know what they want can be steered to another wellknown brand in the same price range. The man in the driver's seat is the salesperson.

Now, what determines which brand the salesperson will show first? And which brand will be passed over quickly or condemned with an eloquent shrug when the customer asks "Is this a good brand?" Which one will the sales clerk talk about with the most enthusiasm?

The point is that at this crucial moment your product is at the mercy of the sales clerk.

Many sales experts think, says Mr. Taylor, that because clerks are not polished salesmen they do not greatly influence a sale. But salesmanship in the usual sense of the word is not essential to guide a potential buyer to a decision. The average buyer asks a clerk for help, assuming with some naiveté that the continual exposure to the merchandise and to the comments of other prospective buyers gives the salesperson "inside dope" about the various brands. Even in discount houses, for instance, the floor people who make no attempt to use salesmanship are constantly plagued with questions about which brand is the best buy.

The fact is, thinks Taylor, that retail salespeople influence a buyer's choice unconsciously. They manifest by manner or speech their own personal preferences, tastes, and prejudices. Dipping into psychology. Taylor says it is the egobuilding effect of having their own taste confirmed by the customer's purchase that motivates them. Re-



New purchasing techniques leave little tolerance for suppliers

First, you stage road shows on the East and West Coasts and in the Midwest. Invited are more than 1,000 representatives of carefully screened electronic suppliers and vendors. Your V-P in charge of manufacturing (above, right, R. B. Parkhurst of Hughes Aircraft Company) lays it on the line, says that old standards for electronic parts are no longer adequate for electronic interceptor control sys-

Next step, more screening. Suppliers selected are surveyed by teams of purchasing and quality engineers.

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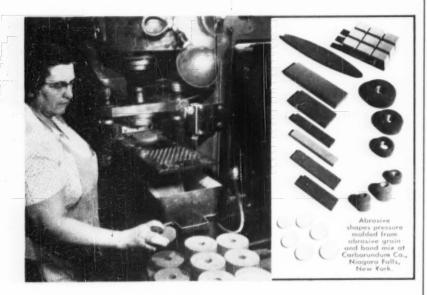
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tail salespeople have been maligned for years in the press. The job carries little status. Confronted daily by customers from higher social and economic strata, they establish superiority by pretending greater knowledge.

It is patently difficult to weigh with any accuracy the many factors that guide a buying decision. On the other hand, it is pretty clear that although the retail salesperson has less influence than an industrial salesman, he nonetheless represents a type of authority for the mass consumer, if only because he does sell competing brands and, in the eyes of the retail buyer, can afford to be objective.

Here, thinks Taylor, is a chance for manufacturers to pick up a sizable increment in sales. Some manufacturers try to get their brands talked up by giving "push money" or gifts to sales clerks—but not only does the FTC frown on this, it loses its punch when your competitor meets your ante.

Others try to gain good will by staging big productions—entertainment, stunts, and gimmicks. And still others try one-shots—a movie or slide film, a morning or evening meeting with salespeople. Where you are trying to create or change established attitudes, however, it takes more than a single injection.

#### How to get impact

The best way, thinks Taylor (and some manufacturers are trending this way), is to offer a retail sales training program for these reasons: store managements welcome help in their most difficult problem; it effectively keeps competition out of this "third" market during the life of the program, at least, since salespeople cannot attend, say, two training programs on TV selling at the same time; if it upgrades the clerks' over-all selling ability, its effects are long-lasting.

This means that your program must meet these objectives:

 It must command attention and interest as a genuinely helpful program which promises to improve the selling behind all items in the store or department.

 It must appeal to retail salespeople as a novel, interesting, enjoyable experience which promises some kind of reward for participation. • It must provide for continuous impact over a period of time in order to condition lasting attitudes and establish habit patterns.

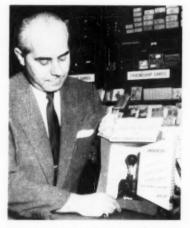
 It must do all these things at a low cost per person so that turnover or shifting of salespersons does not involve the loss of a sizable investment.

• It must require very little extra time and effort from the manufacturer's representative in order to operate successfully.

A program which seems to meet these objectives is one sponsored for two years by the Fostoria Glass Company in which more than 12,000 retail salespeople participated.

The program consisted of regular mailings to the home address of salespeople and included participation features. Those enrolled earned points they applied towards prizes. (For a similar program described in detail see DR&MI, March 1954, page 36, Retail Sales Course by Mail).

Continuous shopping during the life of the program revealed that it was doing a solid job of conditioning salespeople's preferences for Fostoria Glass, plus acquainting them with the many items in the line and increasing their ability to talk effectively about fine glass in general. The real payoff was that sales in participating stores showed important increases.



How to get out from under

After 60 years of selling its products to retail stationers who stacked them up under the counters, the Bates Manufacturing Company, N. J. (major products; staplers, numbering machines) took a long look at the effectiveness of impulse selling in supermarkets, overhauled its merchandising, will now display on counters and in windows.



The AUTHOR

Melvin H. Baker. Chairman of the Board of National Gypsum Company for the past two years, is one of the original founders of the concern. In 1925 he resigned a vice presidency with American Manufacturers' Foreign Credit Underwriters and joined forces with Joseph Haggerty and Clarence Williams to manufacture gypsum wallboard and other gypsum products. He became president in 1928.

Prior to his executive positions, he was a salesman and sales manager for the Beaver Board Company. He holds directorships in Manufacturers and Traders Trust Company, Kellogg Petroleum Products, Inc., and Buffalo City Planning Association among others.

Mr. Baker makes his home in Buffalo, N. Y., and he has lectured on Business Administration at

Mr. Baker makes his home in Buffalo, N. Y., and he has lectured on Business Administration at the University of Buffalo. He belongs to several associations including the National Association of Manufacturers and the Academy of Political and Social Science.

#### **EXECUTIVES AND ETHICS**

Continued from page 36

Rarely will he reconcile himself to his ceiling, or to the enjoyment of his job for its own sake. The symbols and emoluments of the rank he couldn't get will always gnaw at his happiness.

It seems to me there is a pathetic fallacy in this approach to the job, which is, after all, a dominant part of a man's life. The philosopher Raphael Demos of Harvard has crystallized the futility of the materialistic gauge of achievement: "No sooner do we cease being poor, than we become poor once more, because the scale of living has been upped." And he points out a too obvious truth that somehow eludes most of us: "You are rich if you are content with what you own, and poor if you are dissatisfied. . ."

This is not an argument to stifle ambition. Far from it. But I believe a business man—any man—will be a more proficient and confident performer if he can temper his zeal for the world's goods and power with a sense of proportion drawn from outside himself. The good life needs spiritual supports, and we would do well to spend more time amassing spiritual capital. I'm afraid we have some way to go to repudiate the charge John Stuart Mill aimed

at us a century ago: that in America "the life of the whole of one sex is devoted to dollar hunting, and of the other to breeding dollar-hunters."

It is important to remember that a job is a means to a living, not life itself. We should be depending much more on the rewards of religious faith than on the spoils resulting from personal ambition.

No, the business system is not the insatiable Moloch gobbling up its human sacrifice, as is too often portrayed. We as individuals volunteer for our place in the system. I think we are entitled, along with our material comforts, to a bit more tranquility and peace of mind. We fail in this because we lack more enduring concepts of happiness and ful-fillment.

This is where we are most vulnerable. This is where our failures must appear to the writers more pathetic than tragic.

It is certainly a good thing for a man's reach to exceed his grasp. But when the arm grows weary, I can only suggest the consolation that the good Greek proposed: "With God's help may I still love what is beautiful and strive for what is attainable."



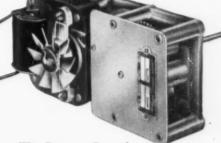
scruggs

NEW

geared

motor

Here's the newest Loyd Scruggs "tailored" motor. It's a 2-pole shaded pole induction motor coupled to a powerful sub-fractional horse-power speed reducer. The basic motor can also be furnished without the gear housing. Send us your specs... without obligation a Scruggs motor will be built to fit them. Write Loyd Scruggs Co., Festus, Mo.



SCRUGGS MODEL 1050 features:

LARGE OIL
RESERVOIRS for long life.
 FAN for cool operation.
 MOLDED NYLON

GEARS for quiet operation.

• VACUUM IMPREG-

NATED COIL for operation under maximum temperature and humidity conditions. The Scruggs Geared Motor is engineered for use in Vending Mechanisms, Actuating Devices, Dispensers and similar applications.

You can stake your reputation on SCRUGGS MOTORS.

THE Loyd Ocruggo COMPANY FESTUS, MISSOURI

MANUFACTURERS OF PRECISION INSTRUMENTS SINCE 1934



costs, increase operation efficiency, and improve your safety record

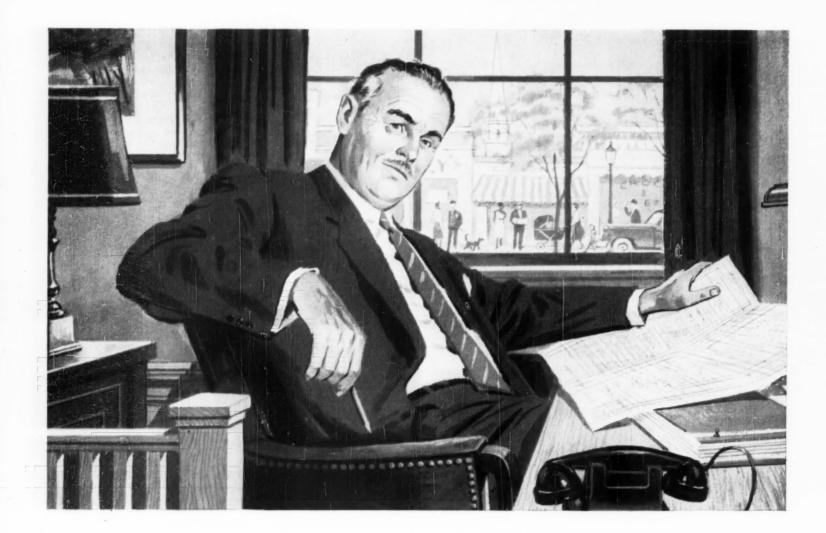
Regardless of the type of vehicle you operate, a Tachograph will economically measure the complete performance of both trucks and drivers.

The Tachograph is an accurate recording speedometer that mounts easily on the dashboard. From the wax-coated chart that is inserted *inside* the tamper-proof aluminum case, you get a complete and permanent record of the entire trip: When truck started—Stopped—Idling time—Distance between stops. Easy-to-

read illuminated dials also show time of day, m.p.h. and total mileage. Tachograph models which indicate and record engine r.p.m. are also available. There's the added safety advantage of the red warning light that signals the driver whenever your company's predetermined speed limit is exceeded.

Learn the full facts about Tachographs. The coupon below brings a copy of Bulletin SU-3—it tells the *whole* Tachograph story.

Wagner			Bulletin	ymouth Ave., St SU-3.	Louis 14,	Mo.
Name and	Position_					A STATE OF THE STA
Company_			_			
Address					_	F737 350
City			State			
We on	erate	Vehicles		5.54	-5	



## The Country Banker

He knows his business—the country banker, and he knows the community's business too. He may limit his own horizon of action to his community's interest, but he has the perspective to see whether his community is moving with or against the surge of progress.

When he's called on to pass on a loan application by a local merchant, he considers the need as well as the responsibility. When a storekeeper asks for a seasonal lift, the banker knows the customs of the trade with its peak buying and selling periods. He considers the risk with the qualifications of the man as the best collateral. The need for physical collateral is always secondary to the talent of the merchant and his stamina for the up-hill climb.

Occasionally, he has to say "No," but when he does he has the facts to support the decision. He would rather say "Yes," but he is a realist first and an optimist afterward. When he looks down Main Street, he can see many current and continuing risks which reflect the prosperity and growth of the community. Among them are his friends and neighbors who respect his judgment, his understanding and his foresight.

This advertisement is one of a series devoted to the business and professional men and women who render distinguished service to their communities.

## **Dun & Bradstreet, Inc.**

OFFICES IN PRINCIPAL CITIES OF THE UNITED STATES

## Here and There

# in Business

WHAT'S NEW

#### AS OBSERVED BY THE EDITORS

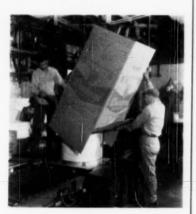
Prefabricated steel buildings of novel design are to be made by Armco Drainage & Metal Products, Inc., Middletown, Ohio. The buildings will have cold-formed steel trusses (instead of the usual hotrolled structural shapes) and will be available in clear-span widths up to 100 feet, with a choice of siding and roofing types. The new buildings will be an addition to, rather than a replacement for, Armco's present Steelox line, and are expected to be particularly useful for manufacturing plants and warehouses. Armco is erecting a building of this type itself to house manufacturing facilities for the commercial product. It is expected to be in production this Summer.

Another new type of long-span construction combines plywood and steel in packaged units, 32 to 80 feet across. Designed and built by Plywood Structures, Inc., a division of Diamond Lumber Company, 323 Pittock Block, Portland, Ore., the design makes it possible to attach



roof sheathing to trusses before erection, as the photograph shows. PSI is prepared to ship complete building packages—with lumber and plywood precut to size, and steel and hardware fabricated to the desired pattern.

New packaging system that makes it possible to put the con-





tainer over the product; then close and seal bottom as well as top flaps automatically; has been developed by Hinde & Dauch Paper Company, Sandusky, Ohio. Designed particularly for large bulky products like home appliances, filing cabinets, and water heaters, the equipment provides support for the product while the flaps are being closed, can be used with one-piece slotted cardboard boxes of the conventional type. According to H&D, the new system not only simplifies the packing job, but also conserves space and often permits the use of a less costly package. In the upper photograph, the box is placed over the product. Hinged roller sections here will close the two flaps that are



## THE ROYAL BANK OF CANADA

Head Office, Montreal

JAMES MUIR
Chairman and President
K. M. SEDGEWICK
General Manager
A. F. MAYNE
Associate General Manager
(non-domestic business)

#### Condensed Annual Statement as on 30th November, 1955

ASSETS	
Cash on hand and due from banks (including items in transit)  Government of Canada and	\$ 542,453,934
provincial government securi- ties, not exceeding market value Municipal and other securities,	944,686,948
not exceeding market value Call loans, fully secured	356,820,517 74,788,180
Total quick assets	\$1,918,749,579
Other loans and discounts Mortgages and hypothecs in-	1,168,841,182
sured under N.H.A. (1954)	100,865,965
Bank premises	27,119,386
Liabilities of customers under acceptances, guarantees and let-	
ters of credit	62,423,760
Other assets	6,143,993
	\$3,284,143,865
LIABILITIES	
Deposits	\$3,062,220,349
Acceptances, guarantees and letters of credit	62,423,760 8,581,623
Total liabilities to the public	\$3,133,225,732
Capital paid up	42,000,000 108,000,000 918,133
	\$3,284,143,865

#### Over 800 Branches

IN CANADA, ARGENTINA, BRAZIL, BRITISH GUIANA, BRITISH HONDURAS, COLOMBIA, PERU, URUGUAY, VENEZUELA, CUBA, HAITI, PUERTO RICO, DOMINICAN REPUBLIC, BRITISH WEST INDIES. OFFICES IN NEW YORK, LONDON AND PARIS. CORRESPONDENTS THE WORLD OVER.

#### London Branches

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2 Cockspur St., S. W. 1

Auxiliary in France
THE ROYAL BANK OF CANADA (FRANCE)

Paris

NEW YORK AGENCY

JOSEPH W. GANANN, Agent JOHN B. MILLER, Second Agent



Serving industry everywhere!

USP Warehouse type Palletainer features the half-drop end gate for easy access. 2,000 to 4,000 lb capacities.

Warehousing small parts in large quantities? USP Palletainers are the most practical, economical solution for achieving better space utilization plus efficient handling.

Specifically... USP Palletainers of the ware-house type offer you amazing versatilities for maintaining warehouse stocks conveniently—with contents always visible for fast, easy selection—plus savings in space—complete stacking safety, ease of transport and shipping. All these, plus the 75% storage space savings made possible by the exclusive "flat-fold" feature.

USP Palletainers have eliminated the guesswork from warehouse parts handling and storage operation. See for yourself how easily they will solve your problems.

UNION STEEL PRODUCTS CO., Albion, Michigan

# PALLETAINERS

Carlo -	GENTLEMEN:
Name _	Please send me complete information on USP Palletainer application.  Title
Address	
City _	ZoneState

hanging down. In the lower photograph, two of the top flaps have also been closed, and glue is being applied to the remaining flaps just prior to final sealing.

Interfloor conveyor system, designed for automatic operation, consists of a vertical pallet conveyor with twin or triple conveyors on each floor for moving pallets in and out of the vertical unit. A special leveling mechanism is said to assure smooth transfer, prevent damage to breakable products. Loads weighing up to 6,000 pounds can be handled, and indicator lights, guide and stop switches, oversize-pallet detectors, and other safety devices are provided. Gifford-Wood Company, Hudson, N.Y., is the builder.

Tilting table for packing heavy boxes is designed to eliminate dangerous lifting, make it possible for one operator to handle a job that often requires two. A leveroperated, closed hydraulic system





controls tilting, and utilizes the weight of the box itself so that no outside power source is required. The table top is 24 by 72 inches, its load capacity 1,000 pounds. The photographs show the table locked in horizontal position for packing, and tilted to remove the load. Made by Valley Craft Products, Inc., Lake City, Minn., a division of

O'Neil-Irwin Mfg. Co., the table is known as the *Hydra-Tilt*.

**Bale sealer** that automatically handles, glues, and seals paper shipping bales in sizes up to 100 pounds is made by J. L. Ferguson Com-



pany, Joliet, Ill. Called the *Packomatic*, it can be adapted for handling bags or bales of almost any bulk material.

New dispenser for round steel strapping is offered by Gerrard Steel Strapping Division, U.S. Steel Corp., 208 South LaSalle St., Chicago 90, Ill. According to the company, this "mill coil container" pays off round strapping easily and without entanglement, speeds and simplifies use of this type of product in bundling and packaging.

Carton imprinting machine, which can handle folded boxes and cartons, bags, tags, labels, and the like, in sizes from 2½ by 2¼ inches up to 18 by 18 inches, is offered by



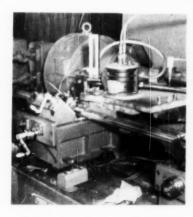
Pitney-Bowes, Inc. Stamford, Conn. The unit feeds, imprints, and power-stacks items at speeds up to 10,000 an hour, says P-B.

Uncasers of several kinds, for both cans and bottles, are being made by RCA, Camden, N. J. Newest of the can-uncasers is an automatic machine which is designed to remove the cans, arrange them with open ends aligned, and

and

feed them out in single file. It's said to be the smallest and lowest-priced unit of its type, yet to be able to handle 550 cans a minute. The bottle uncaser, designed to fit the trend toward large beverage bottles, handles empty quart containers (sizes from 26 to 32 ounces) at the rate of 30 cases a minute. RCA also makes this in smaller sizes.

New grinding machines feature automatic grinding wheel balancing, automatic electric gage sizing with automatic compensations and an automatic "gap eliminator" to reduce non-productive time during infeed grinding cycles. Made in both light-duty and regular types, these new plain hydraulic grinding machines have infinitely variable table traverse speeds from 3 inches to 240 inches per minute, and can be equipped with push-buttonactuated automatic infeed. The light-duty types are basically the same as the regular models, but have extra swing capacity to accommodate flanges or projecting arms on the workpiece. Regular sizes are six-inch and ten-inch; light-duty sizes, ten-inch and fourteen-inch. Cincinnati Grinders, Inc., Cincinnati 9, Ohio, makes them.



For high-speed welding of metal tubing, and for other applications involving joining of continuous lengths of metal, New Rochelle Tool Corporation, 320 Main Street, New Rochelle, N. Y., has a high frequency resistance welding unit that is said to provide unusually high concentration of energy in the seam area, and to be adaptable to a wide variety of welding operations on both ferrous and nonferrous metals. The photograph shows a Thermatool unit installed on a tube mill in the Abbey Etna plant at Toledo, Ohio.

New yard crane has 5,000-pound capacity, 180-degree boom swing. It is especially designed for handling long, heavy loads in narrow spaces, and for loading and unloading freight cars and trucks.



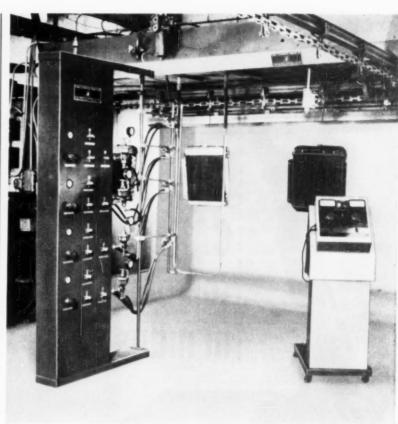
Made by Pettibone Mulliken Corp., 4704 Division St., Chicago 51, Ill., the crane is rubber-tired and can be supplied with two- or four-wheel drive. It has a full torque converter.

To promote safety, and spark sales campaigns, Award Incentives, Inc., 200 William St., New York 38, N.Y., has developed a series of gadgets and give-aways, the latest of which is pictured here. Called the Spin-O-Gram, it's a stamped disc (here attached to a key chain) that spins at the flick of a finger to



blend the letters printed on the front and back and spell out its message, as at the left. The discs may be imprinted with any sales or safety slogan and the disc-holder may also be numbered consecutively to permit registration, using a card similar to the one shown.

New light bulb, with filament mounted vertically instead of horizontally, is development of General Electric's Lamp Division, Nela Park, Cleveland, Ohio. Coiled-coil filaments will be used throughout new line, which, says G-E, will provide 6 per cent more light using same amount of electricity.



## **Ashdee**

**Automatic Electrostatic Finishing Systems Will Cut Your Painting Costs** 

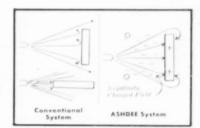
More and more manufacturers with metal part finishing operations are turning to the advantages of Ashdee electrostatic finishing. With the Ashdee system, paint particles are attracted to the product by a high voltage electrostatic field that drastically reduces paint waste, eliminates manual spraying, gives faster production speeds and higher quality.

#### FREE ENGINEERING SERVICE

Ashdee engineers will test run your products and show you estimates of savings without obligation. If necessary Ashdee will provide complete laboratory facilities at no cost to you.

#### GET THE FACTS

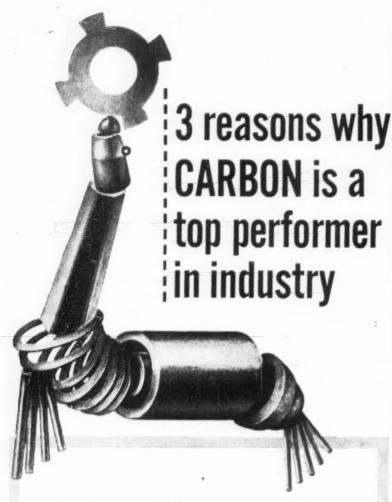
You can own or lease an Ashdee system. Start now to reduce your finishing costs. Write for the new Ashdee case history file that gives you positive evidence that Ashdee's Electrostatic Finishing System is a wise investment.



## Ashdee Electrostatic Products, Inc.

18021 Dixie Highway, Homewood, III.

## ADVERTISING INDEX



For 50 years, carbon engineered products by Morganite have played important roles in many industries and in diversified applications. Here are just three outstanding examples:

- In the textile and chemical industries, self-lubricating carbon-graphite bearings eliminated the danger of oil and grease lubricants.
- In industrial and electrical generating plants, heatresisting carbon bearings solved problems where high temperature prohibited the use of conventional lubricants.
- In food processing plants, inert carbon pump vanes and seals solved the problem of product contamination.

Morganite's Engineering Staff is always ready to help with your design or maintenance problems. Write today for Morganite's brochure on Carbon Specialty Products.



Manufacturers of fine carbon-graphite products for 50 years 3302-3320 48TH AVENUE, LONG ISLAND CITY 1, NEW YORK

ALAN WOOD STEEL COMPANY  Doremus-Eshleman Company	5	INTERNATIONAL STEEL COMPANY Keller-Crescent Co.	50
ALLIED PRODUCTS CORPORATION Gray & Kilgore, Inc.	23	INTERSTATE PHOTOGRAPHERS Hoffman-Manning, Inc.	5
ALLIED RESEARCH PRODUCTS INC Emery Advertising Corporation	4	IRONS & RUSSELL COMPANY	7
MERICAN PHOTOCOPY EQUIPMENT COMPANY 63	-64	KINNEAR MANUFACTURING CO., THE. Wheeler-Kight & Gainey, Inc.	72
Irving J. Rosenbloom Advertising Agency AMERICAN TELEPHONE &		KULJIAN CORPORATION. The Roland G. E. Ullman Organization, Inc.	78
TELEGRAPH COMPANY	96	MAGLINE, INC. Rossi and Company	7
ASHDEE ELECTROSTATIC PRODUCTS INC. Schnell & Associates	93	Richard & Gunther, Inc.	84
BAKELITE COMPANY, DIVISION OF Union Carbide and Carbon		MARSH & McLENNAN, INC Doremus & Company	9
CORPORATION 15, Cover J. M. Mathes, Inc.	111	Roman Advertising Company	75
BANKERS BOX COMPANY Frank C. Jacobi Advertising	65	C. J. LaRoche and Company, Inc.	86
SARRETT-CRAVENS COMPANY The Buchen Company	54	Al Herr Advertising Agency Inc.	75
N. W. Ayer & Son, Inc.	19		27
Grimm & Craigle Inc.	83		94
Robertson, Buckley & Gotsch, Inc.	59		24
SURROUGHS CORPORATION	13		87
HASE MANHATTAN BANK, THE Albert Frank-Guenther Law, Inc.	74	Joseph Reiss Associates PITNEY-BOWES, INC	14
HICAGO HARDWARE FOUNDRY CO Wilson Advertising Service	65	L. E. McGivena & Co., Inc.	76
CHRYSLER CORPORATION, AMPLEX DIVISION	70	Ken Seitz & Associates, Inc.	55
Ralph Sharp Advertising Inc. OLUMBIA RIBBON & CARBON MFG.		L. J. DuMahaut Advertising Agency	77
CO., INC. E. M. Freystadt Associates, Inc.	50	Taylor M. Ward, Inc.	
OMMERCIAL CREDIT COMPANY VanSant, Dugdale & Company, Inc.	26	RECORDAK (SÜBSIDIARY OF EASTMAN KODAK COMPANY) J. Walter Thompson Company	85
COXHEAD, RALPH C., CORPORATION Bruce Angus Advertising Agency	71	REVERE COPPER AND BRASS INCORPORATED	6
CUTLER-HAMMER, INC	58	St. Georges & Keyes, Inc.	81
DENISON ENGINEERING COMPANY,	88	Fredericks & Company, Inc.	91
The Griswold-Eshleman Co. DICTAPHONE CORPORATION	30	Albert Frank-Guenther Law, Inc.	
Young & Rubicam, Inc. DRAKE, STARTZMAN, SHEAHAN	50	Albert Frank-Guenther Law, Inc.	79
AND BARCLAY Marsteller, Rickard, Gebhardt and Reed, Inc.	70	Calkins & Holden, Inc.	16
DROP FORGING ASSOCIATION	68	SCRUGGS, LOYD, COMPANY, THE Winius-Brandon Company	89
OUN & BRADSTREET, INC 80,	90	SHREDMASTER CORPORATION, THE Cayton, Inc.	14
(VERIFAX)  J. Walter Thompson Company	67	SKELLY OIL COMPANY	1.2
BASCO SERVICES INCORPORATED Albert Frank-Guenther Law, Inc.	21	STEELCASE, INC. Wesley Aves & Associates, Inc.	3
ELGIN NATIONAL WATCH COMPANY, ORDNANCE DIVISION	11	SYNTRON COMPANY	82
Waldie and Briggs Inc.		TALK-A-PHONE COMPANY	5
The Joseph Katz Agency	22	TEXAS COMPANY, THE Cover Erwin, Wasey & Company, Inc.	IV
ARNSWORTH ELECTRONICS COMPANY, DIVISION OF IT&T Chamberlia Junk Advertising Inc.	57	TORRINGTON MANUFACTURING	53
Chamberlin-Junk Advertising Inc. FEDERAL TELEPHONE AND RADIO COMPANY, DIVISION OF IT&T	52	Graceman Advertising Inc. TWIN DISC CLUTCH COMPANY	9
J. M. Mathes, Inc.	34	Spencer Curtiss, Inc.	20
ELT & TARRANT MANUFACTURING CO. N. W. Ayer & Son, Inc.	66	Zarker Advertising Company	92
FILMSORT DIVISION, DEXTER FOLDER COMPANY	51	Rumsey & Associates	72
GATES ACOUSTINET CO Warman, Robins & Gorham, Inc.	70	VICKERS INCORPORATED, DIVISION OF SPERRY RAND CORPORATION	11
GLICKMAN, LOUIS J S. Posner & Company	70	Witte & Burden	84
GLOBE HOIST COMPANY	73	Ritter, Sanford & Price, Inc.	14
GLOBE-WERNICKE COMPANY.	28	Ross Llewellyn Inc.	89
Strauchen & McKim GRAPHIC SYSTEMS Diener & Dorskind, Inc.	87	Arthur R. Mogge, Inc.	
GRAYMILLS CORPORATION	61	James R. Flanagan Advertising Agency	71
Ross Llewellyn Inc.	56	Gray & Kilgore, Inc.	49
IANSEN, A. L., MFG. CO. J. M. Haggard, Advertising	73	Glenn, Jordan, Stoetzel, Inc.	25
IEARNE BROTHERS Schippers Associates IEYER CORPORATION, THE	81	Morrison-Green-Seymour, Inc.	61
Frank C. Jacobi Advertising	25	Wallace-Lindeman, Inc.	72
Rossi and Company		WEST DISINFECTING COMPANY G. M. Basford Company	62
NLAND STEEL PRODUCTS COMPANY. Hoffman & York, Inc.	10	WING, L. J., MFG. CO Willard G. Myers Advertising Agency	10
NTERNATIONAL BUSINESS MACHINES CORPORATION	-33	WIREBOUND BOX MANUFACTURERS ASSOCIATION	69
NTERNATIONAL NICKEL COMPANY, THE	60	Waldie and Briggs, Inc.	24
Marschalk & Pratt Co., Inc.		ZIPPO MANUFACTURING COMPANY N. W. Ayer & Son, Inc.	

#### QUIZ ANSWERS

The Ouiz begins on page 59.

Score ten points for each correct answer; the five parts of question 6 each count two. 140-180 is excellent; 100-138 is good, 90 is passing.

- 1. 3 per cent
- 2. 3 per cent
- 3. 5 per cent, a larger proportion than is contributed by mining, or communications and utilities.
- 4. 30 million In passenger miles flown, this is more than 500 times as much traveling as in 1935.
- 6. a-McAdam, b-Westinghouse, c-Sikorsky, d-Daimler, e-Starlev
- 7. True
- 8. 27,000 Or, more than four times the distance from New York City to Tokyo, almost one-tenth of the way to the moon, about one and one-eighth times around the world. 9. 75

10. ten times as large There are well over 2 million miles of surfaced highway in this country, compared with about 225,000 miles of railroad track.

11. 33 per cent While about one quarter of all consumers are involved in automobile transactions each year, the proportion owning automobiles has not changed materially for several years. The more significant change is in the proportion of consumers owning two or more cars; this has more than doubled since early 1949.

12. 60 per cent

13. True In the early part of 1954, the merchant marine owned 228 sailing vessels with a gross tonnage of 46,000. This compares with over 39,000 merchant marine vessels of all kinds with 30,764,000 gross tonnage

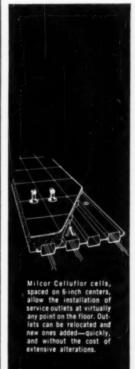
14. Civil Aeronautics Administration and Civil Aeronautics Board.

15. 28 per cent On a \$2,000 car delivered in 1953 to a resident of Michigan, \$555 of the purchase price represented taxes.

16. Union Pacific and Central Pa-

17.:33 per cent

18. California, New York is second, Texas, fifth, and Michigan, seventh.



#### **Don't Build for Tomorrow** with Yesterday's Plans!

Milcor Celluflor - the floor of the future - protects your building investment.

Office automation—data processing circuits —improved communications systems—closed-circuit TV—what do they mean to your building plans? They mean early electrical obsolescence if your plans haven't provided space for these future needs.

Today's increase in electronic business devices has already overtaxed the capacity for wiring in many buildings erected in recent years. The owners of these buildings face costly renovations to protect their investments.

Micor Celluflor provides built-in caceways with the capacity to handle all future wiring requirements—brought to within 3 inches of any spot on the floor' New outlets can easily be installed, or old ones removed, as office requirements change need for unsightly, dangerous extensions, overloaded circuits, "octopus" outlets.

Celluflor means construction savings, too. Its strength and light weight permits less expensive foundations, faster erection, earlier occupancy.

Write for Catalog No. 270.

## **DUN'S REVIEW** and Modern Industry

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## MILCOR Celluflor





1 in the industrial field Inland Steel Company Building, Chicago, Ill.

Pennsylvania Transportation Center, Philadelphia, Pa.

3. In the Banking field Federal Reserve Bank Building, Minneapolis, Minn.

Commercial Credit Building, Baltimore, Md.



INLAND STEEL PRODUCTS COMPANY 4049 W. BURNHAM ST. MILWAUKEE 1, WIS.

OFFICES IN BALTIMORE - BUFFALO - CHICAGO - CINCINNATI CLEVELAND - DALLAS - DETROIT - KANSAS CITY - LOS ANGELES MILWAUKEE - MINNEAPOLIS - NEW YORK AND ST, LOUIS.

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How much time do your salesmen lose by





When a salesman travels to see a customer who's not inor too busy to be seen-that's "blind driving."

It's part of the hard-cash cost of selling. And it's too costly a part to have a place in today's competitive market.

That's why so many sales managers have made it a practice for their salesmen to telephone ahead for appointments.

One sales executive proved that appointments made by telephone saved his company \$5000 a year. Another, with a much larger firm, reported that appointment calls gave his sales force 12% more selling time, worth \$400,000 a year in gross sales.

We can show you how your company can use the telephone most profitably in many ways. Just call your Bell Telephone Business Office. A representative will visit you.

#### LONG DISTANCE RATES ARE LOW

Here are some examples: \*

Baltimore to Philadelphia	٠.			55¢
Cleveland to Pittsburgh				60¢
Dallas to St. Louis				\$1.35
Atlanta to New York .				\$1.50
Los Angeles to Washington	n, D	. C.		\$2.50

These are the daytime Station-to-Station rates for the first three minutes. They do not include the 10% federal excise tax.

CALL BY NUMBER. IT'S TWICE AS FAST.

BELL TELEPHONE SYSTEM





# "with polyethylene the product is always visible"



Polyethylene packaging supplied by Milprint, Incorporated, Milwaukee, Wisconsin.

Of course Marble Arms Company, Gladstone, Mich., is pleased with packaging their gunsights and cleaning cloth in film made of BAKELITE Brand Polyethylene.

Expressed by H. J. Mackie, assistant sales manager, "our unit volume of gunsight sales has increased this season. With the new polyethylene wrap, the item is always visible 100%; it is always fresh and clean and adds a more attractive appearance."

Your own sales figures can be far more attractive when you market products in film made of BAKELITE Polyethylene. Find out how now. Call your packaging supplier. Or write to Dept. MM-42 for our free booklet about hardware packaging.

It pays to package in film made of Polyethylene Plastic

See Bakelite Company Exhibit at National Association of Homebuilders Exposition, Chicago Coliseum, Space #888-889, January 22-26, 1956

BAKELITE COMPANY, A Dicision of Union Carbide and Carbon Corporation (III) 30 East 42nd Street, New York 17, N.Y.
The term BAKELITE and the Trefoil Symbol are registered trade-marks of UCC.



# "Systems completely free of sludge, rust and foam"

-reports Mullins Manufacturing Corporation, Warren, Ohio

FOUR 3000-ton Lake Erie presses went into service in 1953 with an initial fill of *Texaco Regal Oil R&O* – 2700 gallons in each system. Now, two years later, Mullins tells us –

"Your Texaco Regal Oil R&O has done a great job in assuring the dependable hydraulic performance we must have. All systems are completely free of sludge, rust and foam. Very little make-up has been required."

Texaco Regal Oil R&O has been proved by test to have

ten times the oxidation resistance of ordinary turbinequality oils – far greater ability to keep systems free from sludge, rust and foam. And there is a complete line of Texaco Regal Oils R&O to meet the requirements of all types and sizes of hydraulic equipment, all operating conditions.

Let a Texaco Lubrication Engineer help you select the proper one to keep *your* hydraulics trouble-free. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.



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